

The new good samaritan : Or, Domestic practical physician; extracted chiefly from the medical essays of the learned academies in Europe. To which is prefixed a physiological account of pulses. Of the properties and virtues of milk, as an animal fluid, as food, and as a medicine. Of the recovery of persons supposed to be drowned. Likewise, for the use of married ladies is added the practical midwife, by question and answer. With an elegant engraving of the different positions of the infant in the womb. The whole made familiar to every capacity / by S. Freeman.

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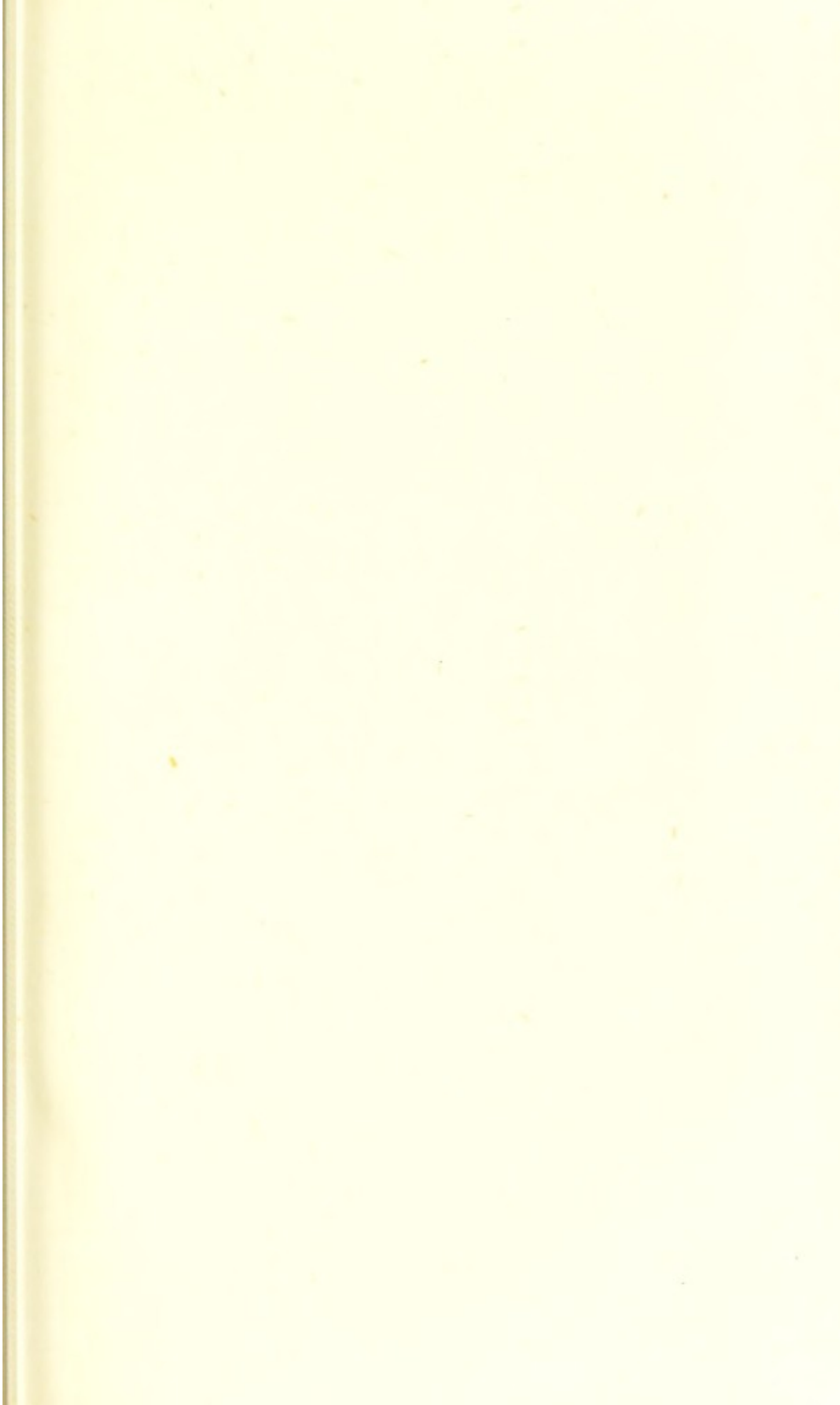


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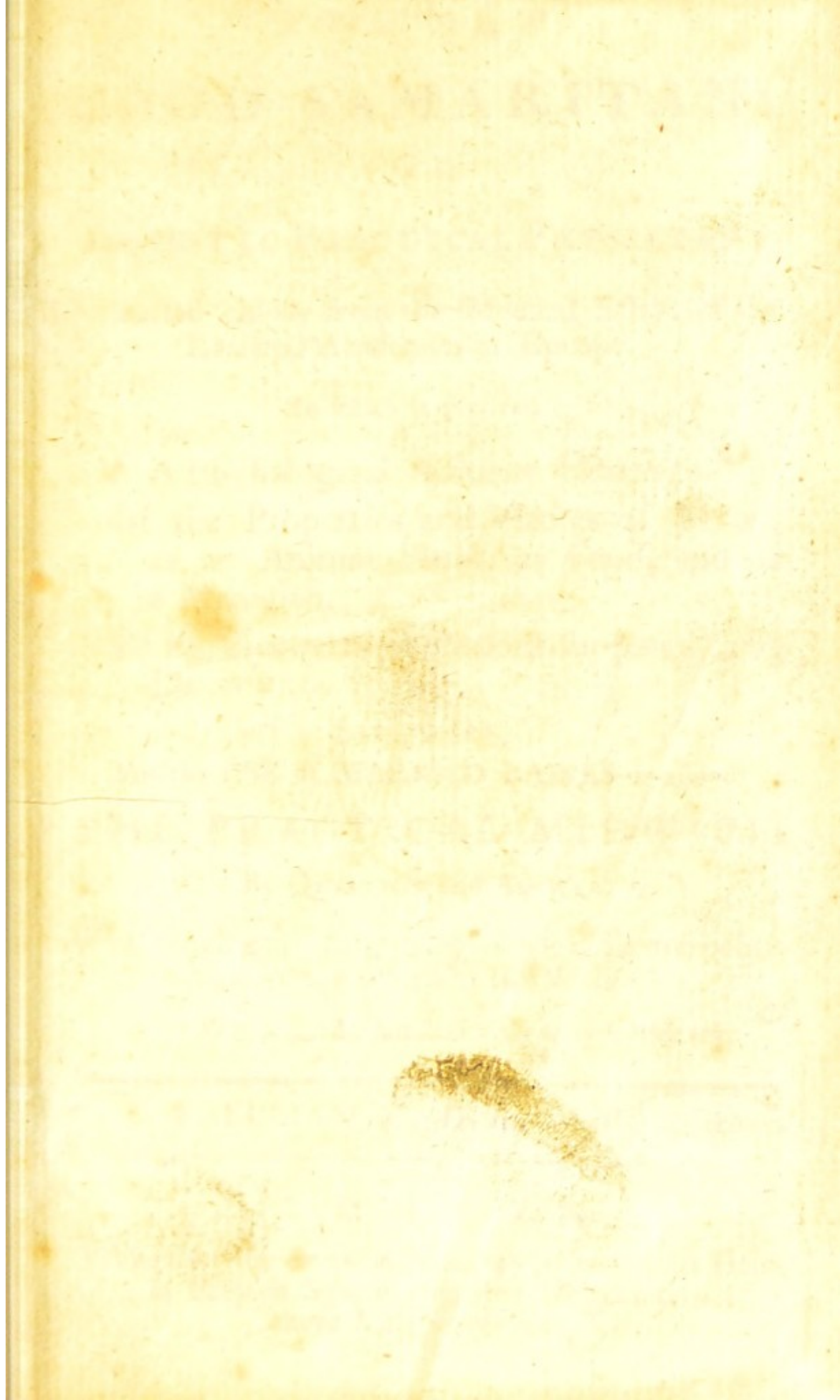
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THE NEW
GOOD SAMARITAN:
OR,

DOMESTIC PRACTICAL PHYSICIAN;

Extracted chiefly from the Medical Essays of the
Learned Academies in Europe.

To which is prefixed

A Physiological Account of PULSES.

Of the Properties and Virtues of MILK,
as an Animal Fluid, as Food, and as
a Medicine.

Of the Recovery of Persons supposed to be
DROWNED.

LIKEWISE,

For the USE of MARRIED LADIES is added

THE PRACTICAL MIDWIFE,

By QUESTION and ANSWER.

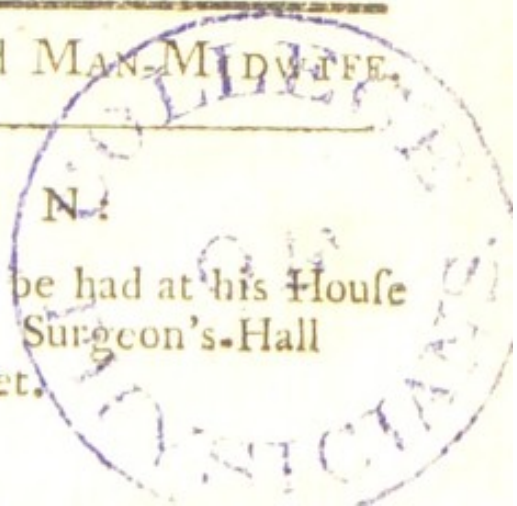
With an elegant Engraving of the different positi-
ons of the Infant in the Womb.

The Whole made familiar to every Capacity.

By S. FREEMAN, M. D. and MAN-MIDWIFE.

L O N D O N:

Printed for the AUTHOR, and may be had at his House
in Prujean Square, opposite Surgeon's-Hall
near Ludgate-Street.



P R E F A C E.

IT has long been a general complaint, that the Theory and Practice of Physic, have been so obscured by an affectation of Learning, that few but those who were already proficient, could gather any useful instruction, or reap any considerable advantage from Authors on this subject; when at the same time it is well known to the *truely learned*, that whatever is of real utility, not only *ought*, but actually *may* be, rendered intelligible to the generality of mankind. However, this consideration has had so little weight with Medical Writers in general, that they seem rather to have sought the admiration, than the Health or Instruction of their Readers; so that, though you may often meet with learned volumes on this subject in almost every private family, yet

P R E F A C E.

yê't they are so far above the reach of common capacities, that they become totally useleſs, being excluded from every domestic, and practical purpose. Not that I would insinuate that this has proceeded from any partial and selfish views in the Faculty, as if they wished to confine that knowledge to themselves, which it imports all men to be acquainted with, or even were desirous of throwing an air of mystery upon a profession, in itself equally useful and respectable; but in fact, so it has happened, that it requires a more than ordinary share of learning to collect any satisfactory information from their writings.

CONVINCED of this, and the probable utility which might arise from a contrary method, I long since began to provide materials for the following work; but knowing the obstructions which attempts of this nature usually meet with from ignorance, and malevolence, and being unambitious of the
cha-

character of an author, I declined all thought of publication. However, as I still continued to collect fresh observations, and saw daily the necessity for adopting such a plan as this, I submitted the whole to the perusal of some Medical Friends, who, not only approved of my design, but removed every objection which I suggested against the publication. I have, therefore, determined at last to present it to the public, equally indifferent about the applause or censure of those, who call themselves *Critics*; provided the persons, for whose use it was designed, may derive that information from it, which every man ought to be possessed of, in what so nearly concerns him, as his Health.

IN the prosecution of this Work, as I have been frequently obliged to recur to the best authorities, ancient and modern, so I have always faithfully translated the former, and rendered the latter as intelligible and familiar as
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the nature of the several subjects would permit, being sincerely desirous to make the following pages as universally useful as possible ; which cannot otherwise be effected than by reducing the subject to the level of every man's abilities.

As whatever I have advanced on the recovery of persons apparently drowned, or in a similar state from suffocation, and other sudden causes, has been already confirmed by repeated experiments, I hope it will meet with that serious attention, which the importance of the subject requires. If read and properly attended to, in private families, it will enable thousands to perform the most noble office of humanity to their fellow creatures, when the suddenness of the accident, or the remoteness of physical aid, prevents the possibility of restoring a beloved object to his friends, or an useful Member to Society. The compendium of
mid-

midwifery annexed to this work, owes its insertion to the same motives. It has already been published in a small volume by itself; but when I considered its utility to married ladies, and that ignorance in this point is frequently attended with the most dreadful consequences, I determined to re-publish it with such alterations as must render it intelligible to every capacity, and thereby prevent some of those gross and fatal mistakes, which daily deprive the world of its most beautiful ornaments. Upon the whole, as I have advanced nothing but what is grounded on the best ancient authorities, or confirmed by the general practice of our most eminent modern physicians, the Reader, who sincerely wishes to profit by the rules hereafter laid down, may safely rely on their established efficacy. The good of mankind, the relief, or instruction of his fellow creatures, should always be the end proposed

posed by every author, and every physician; how far I have kept this point in view, I must now submit to the reader's candour; assuring him at the same time, that if he receives any real advantage from this work, I shall think myself more amply recompensed than by the approbation of all the critics in England. He who directs his Studies to the service of Mankind, must frequently seek in his own breast for the reward of his Labours.

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THE
DOMESTIC
PRACTICAL PHYSICIAN.

SECTION I.

A DISSERTATION ON THE PULSE.

NO doctrine has been involved in more difficulties than that of pulses, since in giving a physiological account of them, physicians have espoused quite opposite sentiments; whilst some doubt whether the pulse is owing to the systole or the diastole, as also whether the motion of the heart and arteries are one and the same for a moment of time; others, especially

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among the ancients, mention an incredible number of different pulses, most of which can neither be felt by the touch, nor comprehended by the mind; others run into the opposite error, and will only admit of two or three different kinds of pulses; others take different kinds of pulses for one and the same species; whilst others assert, that their distinction is absolutely necessary to prevent confusion and blunders in practice. Thus many of the modern affirm a quick and frequent pulse to be the same; whilst others maintain that the distinction between them is of the least importance in practice. A vehement, strong, large, and quick pulse, are now and then said to be of the same species, whilst others will have them to be intirely distinct; and indeed if we consult experience, we shall hardly ever find two physicians agreeing in their appellations of the patient's pulse. The opinions of the learned
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ed are no less various with respect to the use of the doctrine of the pulses in practice; some assert that they are highly fallacious signs in most disorders, and can only be of use in some fevers; whilst others assert the knowledge of pulses so necessary to a practical physician, that he cannot without it form a certain prognostic, especially with respect to latent diseases; for which reason they, with the Chinese, greatly esteem the knowledge of pulses, and maintain, that they ought to be for a long time accurately explored in various parts of the body. But in all probability the origin of the differences is, that the ancients were ignorant of the circulation of the blood, and invented different species of pulses from the speculative and abstracted differences of any solid body at different times variously impelled. But as the moderns have rarely applied the doctrine of the circulation of the blood to pathology and

practice, so they have rested contented with the rules of the ancients with respect to pulses, without attempting a just account of their nature and differences, from the discovery of the circulation of the fluids; but to lay a foundation for certainty in this point, and to prevent future mistakes, I shall, from the laws of mechanics, and especially from the circulation of the blood, shew the nature, differences, and practical use of pulses.

But, before we proceed to this, we shall, for the sake of accuracy and connection, give the physiology or natural constitution of the pulses, that the truths connected with it may be the better discovered and explained: but here a controversy occurs, which is, whether the motion of the heart be the same with the pulse, or whether at the same time the heart is in its systole the arteries are so too; and the systole of the
heart

heart and arteries is the true pulse; or rather, whether the systole of the heart and diastole of the arteries are not reciprocal; or whether, when the heart is in its systole, the arteries are in their diastole; and whether the pulse is not the systole, but rather the diastole of the arteries?

Sennertus, in his *Institut.* lib. iii, par. 1, sect. iv, cap. 1, embraces the former of these opinions, and informs us, that the heart and arteries are dilated and contracted at one and the same time, and that it is wrong not to acquiesce in the evidence of sense: he seems, indeed, in the part now quoted, to oppose his own opinion, by a doubt conveyed to his reader in the following manner: “ If at the same time in which
 “ the heart is contracted, and expels its
 “ contents, the arteries were also contract-
 “ ed, it would follow that the arteries
 “ could not receive the blood; and on the

“ contrary, that at the time the heart
 “ and arteries are at once dilated, the heart
 “ could not receive the blood from the
 “ arteries because these mutual attractions
 “ would hinder each other.” Yet he an-
 swers this doubt in the following manner,
 by telling us, “ That no disadvantage
 “ arises from this, since the arteries are not
 “ so compressed and shut up as they are
 “ absolutely capable of receiving nothing;
 “ but still retain a sufficient cavity for re-
 “ ceiving that which is transmitted by the
 “ heart; as also that the heart receives
 “ blood from the lungs, and that the
 “ arteries not only receive blood from the
 “ heart, but also from the adjacent parts,
 “ and the veins, in their dilatation.” But
 it is easy to perceive, that this doctrine is
 intirely inconsistent with the justest notions
 of the circulation of the blood, of which
 Sennertus was ignorant. But it is surprizing
 that some, sufficiently acquainted with the
 circulation

circulation of the blood, should tread in the steps of Sennertus, and assert that the motion of the heart in its systole is the same with the motion of the arteries perceived in the pulse; and that the systole of the heart, by way of eminence, denotes the pulse; by this means they pretend to refute, who assert, that the motion of the heart and arteries is not the same, but alternate: it is also surprising that such great men as Galen and Joannes Baptista Montanus, in lib. i, de Pulsibus dignose, cap. 1. should affirm that systole or contraction of the pulse cannot be perceived, but even reject the opinion of those who believe that when the pulse vibrates the artery is in its diastole. But we assert with all the moderns, that the pulse is nothing but the dilatation or expansion of the arteries, which are stretched and dilated by the blood protruded by the contraction of the heart from its left ventricle into the arte-

ries, by the impulse of the blood coming from the heart, and communicated to the whole fluids; then, after their dilatation, they only recoil, and are restored to their former figure, but are also in some measure farther contracted, and with a new impulse propel the blood more into the minute arteries and origins of the veins: for according to Bellini, in *Tract. de Pulsibus*, the arteries have a double motion, the one a dilatation, or the impressions they make on the finger, and the other a contraction, or receding from the finger, which, according to Galen, is not to be perceived without great difficulty; for the circulation of the blood, on which life depends, is carried on without intermission by the reciprocal motions of the heart and arteries; nor without these can the motion of the human fluids be accounted for: when therefore the heart is in its systole, and expels its contents, the arteries are in
their

their diastole, and receive them; so also when the arteries, in consequence of the large number of spiral and muscular fibres of which they consist, contract themselves, the veins and heart are in their diastole, and receive the blood from the arteries.

Galen entertained the same opinion which excellently quadrates with the circulation of the blood; for in lib. vii, *Anatom. Administer.* he tells us, that the pulsation of the heart and arteries is such, that when the heart is filled, the arteries are emptied, and when the heart is emptied, the arteries are filled. Fernelius is also of the same opinion; for, says he, the pulse consists of a systole and diastole; the latter in a dilatation or expansion of the artery every way, whereas the former is a contraction or subsiding of it in every dimension.

With respect to pulses there is no small difference of opinions and sentiments; for the ancients maintained, that all the species of them were distinct and different from each other; whereas some of the moderns take the quick and the frequent pulse for one and the same, as is sufficiently obvious from their works: others, fond of being thought uncommonly wise, dissent from them, and affirm, that there is so great a distinction between them, that a practical physician would look upon the man as a fool who should give them out for the same pulse. But, in order to get clear of all doubts and difficulties, we shall more accurately investigate this matter.

The ancients, then, were unanimously of opinion, that since the pulse was a local motion, whatever was requisite to the latter, or could be affirmed or denied of it, was

was of course applicable to the former. Now, according to Galen and Sennertus, five things are requisite to local motion; first, a moving cause; secondly, the space through which the body is moved; thirdly, the time consumed during the motion; fourthly, rest, when bodies moving in opposite directions meet; and fifthly, the instrument by which the motion is performed. From these they deduce the simple difference of pulses.

Upon the moving cause depend vehemence and weakness; hence a vehement or weak pulse are produced; on the space or quantity of the distension or dilatation depend the greatness or smallness of the pulse; on the time in which the artery performs its motion depends the quickness and slowness of the pulse: according as the artery remains long or short in a state of rest, the pulse is said to be frequent or

rare ; and from the organ of the pulse, which is the artery, and which is sometimes softer, arises a soft and hard pulse.

Though Sennertus in his Institut. defines a quick pulse to be when the artery in a short time performs its motion ; yet he afterwards confesses, that the celerity of the pulse cannot be estimated by space, because that space cannot be known by the touch ; for which reason, in defining a quick pulse, he orders us to regard the quality of the motion, whether it is brisk or slow. Hence Fernelius, and some others, have defined a quick pulse such an one as in a short time distends the artery, and a slow pulse that which produces the same effect in a long time. Bellini, in Tract. de Pulsibus, informs us, that it is a quick pulse, which, upon the application of the finger, persists a very short time ; whereas a slow pulse continues longer.

According

According to Sennertus, Fernelius, and others, it is a frequent pulse which has a short time of rest, or in which there is but a short time interposed between each diastole; a rare pulse is that which has a long state of rest, or in which there is a long state of time between one distension of the artery and another; or a frequent pulse is that which in a short time distends the artery, and becomes perceptible to the touch; whereas a rare pulse produces these effects at longer intervals.

The word frequency cannot, however, be properly applied to motion; but the celerity or slowness, the intention or remission of the moving force, are properly competent to motion, since every degree of motion is to be estimated by its celerity or intention, and its slowness or remission; but one motion considered in itself cannot be said to be frequent or rare; but this
difference

difference only holds with respect to the plurality and number of pulsations happening in a certain determined time ; thus, for instance, the motion or impulse is said to be frequent, when in half an hour, water is an hundred times forced from a syringe ; whereas the motion is said to be rare, when the water is forced from it only thirty times during half an hour. Thus, when a globe is impelled, the celerity of the impulse may justly take place with respect to each stroke ; and yet these strokes be applied more rarely, or at longer intervals ; and thus any stroke applied to a globe may be remiss or small, with respect to violence, and yet frequently repeated.

This doctrine holds excellently in those motions which are not continual, but have certain intervals of rest, and in which this distinction is of singular use ; so that quick
and

and frequent pulses ought not to be joined and confounded with each other. But it is far otherwise in the motion of the arteries, which is continual, and requires no rest, in order to carry on a continual circulation of the blood from the heart to the arteries, from these to the veins, and from them to the heart again. It is not to be imagined, that when after the pulse, or dilatation of the arteries, no motion is perceived by the touch, the artery becomes inactive, and remains in a state of rest; since we have already shewn, that immediately after its dilatation, it not only by its proper elastic force, but also in consequence of the influx of the spirits into its muscular fibres, recoils, and is contracted, by which contraction the blood is forced into the veins, and a fresh dilatation of the artery immediately succeeds. Hence the pulse may justly be compared to a pendulum, which performs a continual oscillatory

cillatory motion from side to side, without any perceptible rest.

With respect to this continual motion, which the ancients did not understand, but which is sufficiently comprehended by the moderns, there arises a dispute whether frequency and celerity, applied to the pulse, are separate and distinct from each other? We shall now examine this difficulty, in order to prevent mistakes; when therefore, in a quarter of an hour, a physician counts two thousand pulses in a patient, he calls the pulse preternaturally frequent; when during the same time, he, in another patient, counts only one thousand strokes, he pronounces the pulse rare. Now, if another physician being called, should denominate the frequent pulse quick, and the rare one slow, the question is, which of them is in the right? I can answer, both, for since the motion of the heart and arteries

teries consist in their continual systole and diastole, it is impossible that during a small portion of time, the number of pulses should increase, and be observed greater, unless every systole and diastole of the arteries should become more brisk and intense; that is, be performed in a shorter time, as we observe in the vibrations of pendulums, which the more numerous they are in a certain time, the more short and quick they must of course be; for it is to be observed, that the celerity of one pulse, by itself, cannot be perceived, because it hardly lasts an instant. Hence Sylvius, that happy practitioner, in *Prax. Med. lib. i, cap. 19*, informs us, that “the celerity of the pulse can be conceived in the mind, though not estimated by the touch.” Bellini also, in *Tr. de Pulsibus*, speaks in the following manner: “A quick pulse, because it effects the touch for an instant, in a state but little
“ receding

“ receding from a natural one, either does
 “ not happen at all, or, if it does, cannot
 “ be distinguished by touch ; since the
 “ natural dilatation of the artery hardly
 “ lasts an instant, much less can the cele-
 “ rity of the pulse be perceptible in a pre-
 “ ternatural state.” Hence it is obvious,
 that a pulse cannot be called frequent, un-
 less it is at the same time accompanied
 with celerity ; nor quick, unless it is fre-
 quent ; because one stroke cannot be easily
 distinguished with respect to celerity.
 Schelhammer, in *Tr. de Pulsibus*, just-
 ly observes, that the frequency of the pulse
 is not to be found without a concommi-
 tant celerity. Hence the reason is obvious,
 why in physical authors we never read of a
 frequent and slow pulse accompanying
 each other, or of a quick and rare pulse
 going hand-in-hand ; which species of
 motions may easily be conceived to happen
 in an interrupted motion, but can never
 occur

occur in one of the continued and uninterrupted kind, Hence it follows, that the various species of pulses are by no means to be referred to the nature of any local motion or impulse of a body, so as to lay a foundation for asserting that of the pulse, which can be affirmed of such a local motion; for the ancients were ignorant of the circulation of the blood, from which all the species and differences of pulses ought to be sought and accounted for.

It is sufficiently known that almost all physicians, both ancient and modern, constitute a peculiar difference between a quick and vehement pulse, since they call the former intense, and brisk, and its opposite remiss; and the latter strong and robust, and its opposite weak and languid. And as they deduce the celerity of the pulse, from its motion performed in a short time, so they derive its vehemence
from

from the strong or weak force of the moving cause. But a considerable difficulty occurs here; which is, whether a quick pulse may not also be called a vehement one, and accounted as such, since celerity, in the opinion of all mathematicians, is nothing but an increased or more intense moving force. But an increase, or an intensification of the moving force of celerity, is capable of producing considerable effects, or of overcoming a great resistance. Now the vehemence of motion is only properly applied with respect to the effects; when, by the action of the moving cause a large quantity of moveable and resisting matter is removed.

Hence all who are masters of statical and mechanical learning, agree, that celerity of a small body may be able to remove a large weight or bulk of matter; since it is certain, that a globe of a certain diameter,

ter,

ter, moving with double celerity, produces more considerable effects than a globe of double the diameter, moving with less celerity.

Besides, it is remarkable what surprising effects are produced by some of the most subtle bodies, such as air, and fire, when in a quick and rapid motion. Galen, in lib. iii, de different. Pulse, cap. 5, seems to think that the celerity and vehemence of a pulse are not much different from each other, as he informs us in the following manner; "The word vehement," says he, "is commonly used in order to express some strong, and at the same time, quick action;" and the persons who perform such actions are called σφοδρῶσι. The same author also informs us in the part last quoted, that if he had a power of giving names to pulses, he would call the simple quality, or difference of such

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pulses

pulses as resist the touch, “force or
“strength, or some such thing; and the
“difference compounded of the strength,
“and the celerity vehemence.” But be-
cause the word vehemence is by most phy-
sicians used to express one of the simple
differences of pulses, he thinks it is to be
retained, and not changed. But that this
affair may be rendered more clear and per-
spicuous, we are here, according to the
principles of statics and mechanics, to
suppose, that vehemence may be consider-
ed in a double respect, either with relation
to the body in motion, or with respect to
the augmentation of the moving force. In
general, motion is said to be vehement
when it has great force, produces great
effects, or overcomes much resistance.
Hence a pulse is said to be vehement,
which makes a strong impression on the
hand which feels it; whereas that is called
languid and weak which affects the hand
in

in a faint and languid manner. But vehemence with respect to the body in motion, is when either its quantity of matter, or its moving force, is great. Hence a body of great bulk and moving force is of great force when put in motion, or produces a vehement motion.

The word vehemence is also applied to the increase of the motion; that is, when it becomes brisk, intense, and quick. Hence it is obvious that a very small body may, by being put into quick motion, produce very considerable effects; but that still more considerable efficacy is exerted when the quantity of matter and the celerity of motion concur. Though therefore, according to Galen, a quick pulse, considered in itself, is never free from vehemence, yet the pulse is only properly and strictly called vehement, where a large quantity of spirits animate the fibres of

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the heart. This pulse, when without celerity, is called strong; but when accompanied with celerity, vehement; and at the same time, large, when not a small but a great quantity of blood is forced into the arteries by one systole of the heart; and then (which is the sign of a vehement pulse) it beats the finger strongly and with a kind of violence. But because it is not necessary that under a quick systole of the heart, there should always be a great quantity of strength or spirits, nor that the blood should always be expelled copiously, but few spirits are often sufficient; hence the artery is not in this case forcibly struck, though the pulse is at the same time quick.

Since the ancients, as we have already observed, deduced the species of pulses from the nature of local motion, and feigned as many species of pulses as there
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are species of motion, so there are (especially in Galen) numberless differences of simple and compound pulses described, with respect to time, space, instrument, order, equality, proportion of strokes, and moving force. But afterwards, when they found these speciously-contrived differences either incomprehensible, or useless in practice, they justly exploded and discarded them. Thus Johan. Bapt. Montanus, in *Consil.* 256, frankly confesses, that he was ignorant of the minute differences of the pulses; and tells us, that he believed Galen had something of the Greek subtilty about him, and laughed in his own mind when he was reducing the kinds of pulses to their several species. He afterwards adds, that though these differences may possibly be conceived in the mind, yet they are not all perceptible by the touch. Caspar Hoffman, in *Institut.* speaks in the following manner: “ The short compendium

“ of Goldaldinus de Pulsibus, is, in my
 “ opinion, preferable to the three volumes
 “ of Galen, concerning the differences,
 “ causes, and prognostics of pulses. These
 “ last works I take to be Kerophilean
 “ subtilties, which he might have invented
 “ not only when young, but also when he
 “ had the advantage of experience and
 “ practice.” This opinion I was induced
 to entertain by Montanus, in *Consil.* 257.

I was told by a friend in Italy, who heard
 the account from the mouth of Bartholo-
 mæus Schwalbius himself, a celebrated
 physician of Prague, that this practitioner
 was content with three differences of
 pulses; an equal and an unequal, a quick
 and slow, a strong and weak. Plembius,
 also, in *Fundam. Medic. lib. v. sect. 2,*
cap. 2. tells us, that physicians trifle egre-
 giously about pulses, since the subtilty of
 some of their minds had induced them to
 constitute

constitute differences of pulses which could not be perceived by the senses. The celebrated Welschius, in Oper. tells us, “ That
 “ in the whole doctrine of pulses, many
 “ things uncertain, superfluous, and imagi-
 “ nary, have long ago been discovered by
 “ the learned, who have observed a quite
 “ different motion in the circulation of the
 “ blood, which they ascribe to the pulsation
 “ and vital force of the heart;” whilst others attempt to account for it by invention of their own, rather than by mechanical reasons. Sylvius has reduced the numerous differences of pulses invented by the ancients to three heads; that is, the strength, largeness, and the frequency of the pulse. By a strong pulse, he means one of the vehement kind, which with a certain force strikes the finger that touches it. The weak pulse is when the artery is dilated much; and the small, when it is only a little dilated or expanded. The

frequent pulse is when in the same space of time the pulsations happen oftener than at other times, or more frequently than in other patients; and the rare pulse is when the strokes or pulsations of the artery happen less often than they used to do.

But that we may reduce things to better order, and establish the genuine differences of pulses which occur in practice, both in natural and preternatural states, we must first, from the principles of mechanics, suppose that all motion is quick or slower; for celerity and slowness are genuine properties of motion. Hence Galen, in Lib. de Pulsibus ad Titrones, justly informs us, that celerity and slowness properly belongs to motion, that the former is brisk, and the latter a slow and remiss motion; and that from these we were to form a kind of comparative judgment concerning the natural pulse. Secondly, all
 motion

motion is performed in a large or in a respectively small space, and is consequently either vehement or languid. Thirdly, with respect to order, motion is either equal or unequal; and the equality is to be understood both with respect to time or celerity, and with respect to magnitude or vehemence. And fourthly, with respect to the moveable body, motion is either great or small.

Now we suppose that the motion of the heart and arteries is continual, and consists of the reciprocal systole and diastole without any interruption; for which reason every pulse is either large or small. The large is when much blood is by one contraction of the heart thrown into the artery; in consequence of which, its dilatation is large and full; the small pulse is when in consequence of little blood forced into the artery by one systole of the heart, the

expansion of the former is but small and inconsiderable. Besides, the pulse is either quick or slow; the quick is produced when the heart quickly and in a short time contracts itself, and throws the blood into the arteries. The slow, on the contrary, is when the contraction of the heart requires a longer time, or when the conveyance of the blood into the artery lasts considerably long. But as in every pulse the degrees of celerity and slowness cannot be accurately estimated and computed, because they happen in a moment; hence from the frequency, that is, when, during the same time, the expansion of the artery is observed oftener than at other times, the celerity of pulses ought to be determined; but in such a manner, that the frequency is not applicable to any motion considered in itself. But in a continual motion (which however consists of different species, a systole for instance, and a diastole) where
one

one is perceived, and the other not, we ought in justice to make an estimate of the celerity from the large number of the perceived motions or strokes. Thirdly, the pulse is either equal or unequal; equal when there is an exact equality with respect to the celerity or frequency of the succeeding pulses, as also with respect to their largeness and smallness. The pulse is said to be unequal when one stroke is large and another small and weak; or when one is quick and the other is very slow, so that the pulse seems to be intermittent; though the intermission of the pulse may be more properly referred to that species of inequality which consists in a great slowness. Fourthly, the pulse is either vehement and strong, or weak: the vehement pulse is when the systole of the heart is performed by a large quantity of moving force, or spirits; and the weak, when the heart is contracted by a small quantity of spirits.

The differences formed by the ancients of the vermicular, formicating, tremulous, ferrated and caprizating pulse, depend partly on the inequality of the pulses, but most of all on the convulsion of the coats composing the arteries; for which reason they are almost always to be esteemed dangerous in acute disorders. As for the hard and soft pulses, these depend only on the state and condition of the artery; for when, in consequence of an excessive pain, spasms, or convulsions, the coats of the artery become hard, so that the resistance makes a strong impression on the touch, the pulse is said to be *hard*. The soft pulse is when the fibres of the coats of the arteries are flaccid, relaxed, and moist. When a large and vehement pulse concurs with such a soft state of the arteries, it is called an *undulating* pulse, which is the fore-runner of a profuse and copious sweat.

From

From these simple differences we may easily discover what species of pulses may be joined with each other, and what not. First then, there is a pulse compounded of the large and quick; of the large and vehement; of the strong and quick, and of the vehement and small. Secondly, there is a pulse compounded of the frequent and weak; and of the quick and small; there is also a slow and a large pulse; such as that which happens in a natural state, and in plethoric old persons, as also in some melancholic and scorbutic patients. But there is never a quick and slow pulse, nor a slow and rare, nor a vehement and weak pulse, unless we intend to confound words.

As the motion of the heart and arteries depends, first, upon the quantity and strength of the spirituous elastic and expansive substance contained in the blood

and nervous fluid; secondly, on the due tone of the muscular fibres of the heart and arteries; and thirdly, on the proper temperature, quantity, and consistence of the blood; so it is to be deduced and accounted for from these sources. Now it is certain, that life, health, and the due order of the whole body, depend upon a proper and equable circulation of the blood and humours through the solid parts; so that the better regulated and the more equable the circulation is, the more perfectly nature preserves herself, and cures the diseases incident to her; and, on the contrary, the more this circulation recedes from a due and equable state, the weaker nature is said to be, and the more subject to misfortunes and diseases. It is therefore of the greatest importance, that the physician should know the circulation peculiar to each patient, both in a natural and preternatural state, that he may be the better able

able to form a judgment of their disposition to diseases, and of the nature and event of their disorders. Now every one must own, that the circulation of the blood cannot be better investigated than by feeling the pulse; not in a superficial manner, but frequently, and for a sufficient time: for the pulse not only discovers the imperfections and strength of the whole body, but also the nature of the blood and the state of the various secretions. And as a pendulum of a clock, by its equable and regular vibrations, manifests the worth of the clock, so the pulse discovers the habit of the patient, and the vigour or depravation of all the functions.

We now come to inquire what a moderate, constant, and equal pulse is, since it is as it were the rule and measure by which we are to judge of the rest. A moderate pulse, therefore, is that which is

large, but neither quick nor slow, hard nor unequal: this is the pulse with which all others ought to be compared, and which denotes the best state of health, the absence of all preternatural and foreign things, and a due and temperate degree of heat; for when such a pulse is present, the fluids are duly spirituous, the fibres possessed of their natural tone, the blood temperate and fluid, and, consequently, the transpiration free, the nutrition good, the animal functions vigorous, the secretions duly carried on, and the patient in a state of good health. But when the pulse is quicker, and consequently more frequent than usual, it indicates a preternatural irritation of the heart, as the ancients express it; unless it proceeds from external causes. But if such a pulse continues long, it infallibly denotes a disorder accompanied with an increase, and even a fever. It is generally produced by an in-

ordinate intestine motion of the blood, and a change induced on the crasis of the spirits, by an admixture of heterogeneous and often caustic particles. When the pulse is vehement, and at the same time quick, it indicates a feverish intemperature, an admixture of something heterogeneous with the blood, lymph, and spirits; but at the same time a large quantity of strength and spirits. If a vehement and quick pulse is also large, the circulation of the blood is brisk, the heat and thirst great, and whole habit red and turgid. Where the pulse is small, and little blood is conveyed from the heart to the arteries, and from the veins to the heart, the circulation of the blood is faint and languid. Hence the transpiration and secretions are but small, and the strength little: but if a small pulse is at the same time weak, frequent and quick, it denotes a great languor of the strength, a

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preternatural intestine motion, and a weak circulation of the blood; and if this species of pulse continues long, it indicates malignity and great danger.

A slow pulse generally denotes a viscosity, thickness, and weak circulation of the blood, together with a langour of the secretions; but if it is at the same time weak, it is dangerous, and raises a suspicion of a total loss of strength. But a pulse which is slow and large denotes sufficient remains of strength, tension, and thickness of the fibres of the heart and arteries; and a viscid and tenacious blood. All unequal pulses are very bad, since they denote that there is neither a due influx of the spirits, nor a proper and equal mixture of the blood; but particularly such pulses always prognosticate unlucky events, when they are weak. Intermittent pulses are also of a bad kind, or generally
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accounted the presages of death. But it is not universally so; for an intermittent pulse frequently happens without danger, where, for instance, the symptoms are of a bad kind, and the patient's strength still entire. Hence this species of pulse frequently happens in hypochondriac and melancholic patients, where the intestine motion of the blood is diminished by its thickness. But when the pulse is weak and quick at the same time, it generally prognosticates death. An hard pulse generally indicates pains, spasms, and convulsions, because the fibres of the heart and arteries are spasmodically constricted. The irregular, caprizating, and discontinued pulses, denote a very bad state of the body, both with respect to the fluid and solid parts.

It is carefully to be observed, that one kind of pulse is not found in all persons; for

for the pulse depends on the tone of the muscular fibres, on the influx of the spirits, and the nature and temperament of the blood; and as all these are surprisngly various in human bodies, with respect to age, sex, the season of the year, the climate, the method of life, the sleep, and the passions of the mind, so also the pulses vary from each other according as these circumstances differ. Thus men generally have a large and vehement pulse, and women one of a more slow and weak kind; for the former have stronger fibres and an hotter blood than the latter. For this reason also, the circulation of the blood is brisker in men than in women; and the former do not generate such loads of redundant blood and humours as women, who are generally weaker, and more subject to diseases. Choleric persons, and those of sanguineo-choleric constitutions, have a larger, quicker, and more vehement pulse than

than phlegmatic and melancholic persons; for which reason the fluids move more quickly, the excretions are made more expeditiously, and the blood is more fluid in the former than in the latter; for the blood of the former is impregnated with a larger quantity of oleous and sulphureous parts, which are the source and matrix of heat and spirituous quality. Thus also, those of a slender habit, who have strong fibres and large vessels, have a larger and stronger pulse than those who are fat, have lax fibres, and narrow vessels. Hence they are also sounder, more robust, and more capable of enduring fatigue. This is also the reason why those who are naturally thick and fat are more readily seized with sickness, and destroyed by it than those of slender habits.

In infants and children, the pulse is frequent and soft; whereas in old persons, it is

is slow and large, whilst in young persons, and those full grown, it is large and vehement; for generally infants and children generate a larger quantity of humours (which are necessary to their growth) and collect a great deal of fordes which is the reason why infants and children are more generally seized with sickness, and more readily die of it, than youths and adults. Old persons have thick blood, but rigid fibres; for which reason their pulse is hard, and makes a forcible impression on the touch: but in infants and children the pulse is soft, on account of the tenderness of the laxity of the fibres. The pulse is also changed by the season of the year, the exercise of the body, the ailments, and the affections of the mind. In the middle of the spring, the pulse is large and vehement; at this season also the strength is greatest; for which reason persons are at that time most rarely sick, and
recover

recover most easily: in the middle of the summer the pulse is quicker and weaker, because by the intense heat the strength is impaired, whilst the intestine motion of the fluids is greater than it usually is. In autumn the pulse is slower, softer, and weaker than at any other season; and in winter harder, a little more vehement, and slower. Among kingdoms and climates, those which are hot and sultry may be compared to the middle of the summer, those which are cold to the winter, and such as are temperate to the spring.

Exercise increases the pulse, and consequently the circulation of the blood, whilst an idle and inactive state renders the pulse slow, weak, and languid, and diminishes the circulation of the fluids. Spirituous aliments render the pulse large, vehement, and frequent. The pulse of such as are asleep is slow, small, and languid;

guid ; but as soon as they awake, it forthwith becomes large, quicker and stronger ; the pulse of those who are angry is large, vehement, and quick ; that of such as are frightened, frequent, small, and inactive ; and of those who are sorrowful, small, languid, and slow ; so that according to Fernelius, in lib. iii, de Pulsibus, “ the common and
 “ ordinary affections of the body change
 “ the pulse, so that without duly adverting
 “ to these affections, the pulse cannot be
 “ certainly understood, nor can it be de-
 “ termined how far it recedes from a
 “ natural state in consequence of diseases.”

The natural pulse is therefore to be felt and observed, not immediately after exercise, bathing, immoderate eating, drinking wine, or other causes which exagitate the heart and spirits ; for we are to determine nothing about the pulse till the force of external causes have ceased, and all perturbations

turbations of the body are allayed; for the pulse is the most certain sign and criterion for judging of the motion of the heart and blood; but if the pulse alone is observed, without paying a due regard to other circumstances, it may lay a foundation for forming a false judgement; because, as Celsus says, in lib. iii, cap. 6. the pulse may be disturbed by a thousand things.

There has almost always been a considerable dispute among physicians, what pulse is essential to fevers, or constitutes their pathognomonic sign: many of the ancients, among whom Galen was first, informs us in their works, that a quick and frequent pulse denotes a fever; but many of the moderns take a frequent pulse for the genuine sign and characteristic of a fever: thus Sylvius, in *Parx. Med. lib. ii*, speaks in the following manner; “ A pre-
 “ ternaturally

“ternaturally frequent pulse is the sign
 “which at all times belongs to a fever
 “alone, and is consequently its pathog-
 “nomic sign; so that when this sign is
 “present, a fever is present; and when it
 “is absent, so is the other also; nor is
 “any other sign universally proper to all
 “fevers hitherto discovered by practition-
 “ers;” for all other signs do not so pro-
 perly denote a fever, as the species, the
 degree, or the time of a fever. Etmuller
 tells us, “that a preternaturally frequent
 “pulse is justly accounted the pathogno-
 “monic sign of fevers by Sylvius, both in
 “his *Dissertatio de Natura Februm*, and
 “in his *Praxis*, whatever Deusingius, in
 “*Tract. de Disquisitione Antisylyana*, may
 “affirm to the contrary.” Decker a
 practical physician of Holland, in *Not. ad*
Barbette, informs us, “that there is a
 “fever wherever a preternaturally pulse is
 “observed.” Schelhammer, in *Tract. de*
Puls.

Puls. tells us, “ that in all fevers there is
“ a frequent pulse, which when accompa-
“ nied with heat, is their pathognomonic
“ sign.” The celebrated Bohnius speaks
in the following manner: “ In a frequent
“ pulse the strength of the heart seems
“ equal to the morbific cause; if this fre-
“ quent pulse remains in an uniform man-
“ ner, and is consequently the pathogno-
“ monic sign of fevers; but if a weak-
“ ness of the pulse is combined with its
“ celerity, it indicates loss of the strength
“ more or less, as more or fewer and ve-
“ hement strokes are observed.” Other
authorities would be of no use, only we
must observe, that upon a false hypothesis
not only the ancients, but also many of the
moderns, made a distinction between quick
and frequent; for they called the pulse
frequent, if within a certain time frequent
pulsations were made; whereas by a quick
pulse they meant one of the vehement
kind.

kind. Hence Willis, in *Traët. de Febribus*, calls that a febrile pulse, in which the arteries vibrate vehemently and quickly; where he also asserts, that if the pulse becomes more vehement, the fever is augmented. Cælius Aurelianus, in *lib. i, Acut*, tells us, “ That the sign of fevers
 “ is an intense heat and a vehement pulse,
 “ unless it should be produced by some
 “ external cause.”

For these reasons Brown, in *Observations Medic.* every where asserts, that a quick and weak pulse are contrary to each other; so that by the word quick it is obvious he meant vehement. Though authors as yet seem to have formed distinct notions of pulses, yet all, both ancient and modern, seem to agree in this, that a frequent pulse in every species of fever, whether continual or intermittent, whether benign or malignant, whether in its beginning

ning or at its height, proves such a fever to be present; hence they always join the frequent either with the quick, or with the weak pulse; so that they agree that the frequent pulse is rather to be called the essential sign of fevers than the quick, which none of them will hardly assert to be found either in the beginning or horrors of fevers, or in any of the malignant kind.

But from what we have supposed, it is sufficiently obvious that these differences may be excellently reconciled, since the quick pulse is nothing else but the frequent, which is the true pathognomonic sign of fevers: but this frequency is either greater or less, and associates itself with the great or vehement, or with the small and weak, according to the diversity of fevers and the times of the disease. A frequent pulse, when weak and small, is scarcely ever good; since it denotes a languid and

slow circulation of the blood; but a frequent large or vehement pulse, such as is generally observed in the height of continual fevers, denotes a brisk circulation of the blood, and an increased heat of the body. In investigating the cause of a frequent pulse, which is generally preternatural, and accompanies several disorders, we shall follow the accurate Bellini, who in Tract. de Pulsibus, accounts for the motion of the heart from the influx of the blood through the coronary arteries, and of the nervous fluid through the nerves, into the fibres of the heart; from which he concludes, that the muscles of the heart are most frequently moved when the nervous fluid is most frequently conveyed into them, which happens when it is forced into them by a sufficient quantity of blood flowing forcibly into the brain. Now by a frequent contraction of the heart a frequent pulse is produced, which indicates that a
proper

proper quantity of blood is conveyed to the brain, and that the brain is forcibly pressed, which will happen, either when the blood stagnates therein, in consequence of an obstruction of its veins; or when the blood, contained in these veins, cannot flow into other parts, or in the lungs; or when the blood is thrown into a state of effervescence, by which it assumes a tendency to move in every direction with a greater impetus, and by that means presses the brain more powerfully; the muscles of the heart also move more frequently when irritated by any stimulus. If, therefore, the blood is too acrid or hot, so as to stimulate the sinuses of the heart, the heart will be more frequently contracted, and the frequency of the pulse will indicate a stimulating quality in the blood.

Since we have shewn, that from the pulse we are to form a judgment not only of the

circulation and temperature of the blood, but also of the motion of the spirits and the strength of the patient, so the knowledge of the pulse and a due attention to it, must be of singular service to the physician, not only in investigating the nature of disorders, and forming a right judgment concerning them, but also in prescribing medicines for their cure. But it is to be observed, that the pulse is to be carefully and not superficially consulted. The physicians of China are far more careful in this respect than those of Europe; for the Chinese often spend a whole hour in feeling the pulse, whilst the English physicians have hardly patience to feel above two pulsations; a practice highly culpable, since, after ten strokes of the artery, an inequality or intermission often occurs, which happens whilst the unequally-mixed blood passes through the heart. The pulse is also to be felt in both wrists, in the neck,
and

and in the temples ; since it is certain, from experience, that the pulse in the wrists frequently varies, and may be more commodiously felt in one than in another. We also to advert to the pulses of either parts ; thus sometimes hypochondriac patients perceive a large pulse under the ribs on the left side ; which happens when a quick and viscid blood, exagitated by heat or any other cause, endeavours to procure a quick passage through the pancreas and spleen, but stopping in their narrow vessels, produces a pulsation, and a kind of pricking pain. Hence Joh. Vander Linden, in Select. Medic. tells us, “ That the blood
 “ in this case raises a kind of tumult with-
 “ in, by pricking and striking on the
 “ spleen.” How intense the pricking pains of the spleen are, some sound persons experience as soon as they are over heated.

Tulpius, in Cent. xi, Obs. xxviii, mentions a man who had a preternatural pulsation in the spleen. In continual and malignant fevers a large internal pulsation in veins of the head generally denotes a subsequent delirium; since it is a sign that the blood there congested circulates slowly, till at last, becoming stagnant, it produces a violent inflammation of the meninges. Hippocrates, in Coac. Prænot. informs us that “ If a large pulse arises from an excessive ebullition of the blood, so that in fevers the veins of the temples beat, and the face is turgid, without a softness of the præcordia, there is reason to suspect that the disease will be long, and that it will not terminate without a large hæmorrhage from the nose, an hiccough, convulsions, or sciatic pains.” The reason of this, in my opinion, is, that the redundant blood seeks for an outlet either

either by the nose or the hæmorrhoidal veins; and the sooner this happens, the sooner the patient is free from his disorder.

When a pulsation is observed in any part of the body, where at other times it is not felt, we may certainly conclude that the part is inflamed and disposed to a supuration, especially when it is accompanied with tumour and pain. An hard pulse is almost an infallible sign in the membranous parts; for this hardness of the pulse, or excessive tension vibration of the artery, indicates something of a spasmodic nature, arising from the consent of the parts, and produced by the inflammation and pain. The pulse of persons labouring under disorders of the breast, or a palpitation of the heart, is generally frequent, unequal, and languid; but such a pulse, unless when vehement, is accompanied with no

preternatural heat ; and happens because the blood does not pass through the sinuses of the heart and the lobes of the lungs. In weakness, and a disposition of syncope, the pulse is generally small, rare and languid ; but, if the pulse is absolutely imperceptible, the body covered with a cold sweat, and the functions of the mind are not totally destroyed, I have observed, that the patient infallibly dies in six hours ; and such a situation I have seen produced by corrosive poison. It is to be observed that about the critical times in fevers, when nature endeavours to throw off the superfluous and peccant matter by stool or sweat, the pulse, though languid, is yet more regular and less frequent, which is a certain sign of recovery. But if the pulse is soft, and undulating, it is a sign that a salutary critical sweat is just coming on.

It is also to be observed, that the pulse is changed by medicines. Thus, after drastic purgatives, which procure too many stools, the pulse is generally preternaturally quick. After venæfaction, especially in plethoric habits, the pulse becomes quicker, a sign that the circulation of the blood, in consequence of it having a larger space, is happily increased: since by this means a suppression of the menses or hæmorrhoides, is generally removed. It is certain, not only from the authority of Sydenham, but also from experience, that, after the use of chalybeates, the pulse is quicker, the face redder, and the heat greater. Strong sudorifics, composed of volatile oleous substances, greatly increase the pulsation of the heart and arteries; on the contrary, onodynes, opiates, preparations of nitre, precipitating powders, acids, and such things as diminish the intestine motion of the

blood and fix its sulphur, render the pulse calm and moderate in pains, inflammations, and febrile intemperature. Such an effect I also once saw produced by a due mixture of nitre and camphire, as Doctor Wills has justly observed, in Tract. de Febribus. Some very useful and important rules for the exhibition of medicines are drawn from the state of the pulse: thus purging and vomiting are contraindicated by a too quick and vehement pulse; also by a low and depressed pulse; for when the blood is in a violent motion and ebullition, the secretions are generally very languid. If the strength is defective, which may be known by the languid state of the pulse, emetics and purgatives diminish the strength still more; so that the physician ought to consult the pulse before he exhibits them. For when the pulse is strong, and the motion of the blood regular, these artificial evacuations are most beneficial,

ficial, and succeed best. The same caution is necessary in the exhibition of sudorifics and all analeptics, which convey heat and motion to the blood; for if the pulse is strong and frequent, such spiritous substances do more injury than good; because they rarefy the blood too much, and accelerate its intestine motion; by which means a delirium, and other inflammations, are frequently brought on. Great circumspection and attention to the pulse is also requisite in the exhibition of narcotics or opiates; for as these are possessed of a power of stopping the motion of the blood and spirits, and consequently of impairing strength, so they ought never to be exhibited when the pulse is weak, languid and small, but are to be avoided like poison. But if the pulse is unequal and intermitting, opiates readily procure a perpetual sleep.

SECTION II.

EXPEDIENTS FOR THE RECOVERY OF PERSONS SUPPOSED TO BE DROWNED.

NOTWITHSTANDING any means that may have been suggested, or are generally in use, to prevent persons in different stations of life, and under different circumstances, from being drowned, nevertheless many accidents of that sort will unavoidably happen in divers places, from persons being exposed to the water; particularly on board ship, in sea-port towns, near ferries, by fishing or bathing in rivers, brooks, ponds and other waters, which latter sort too frequently become the scene of those calamities, through the neglect of due precaution in the officers of roads, to secure such dangerous places in a proper manner.

There

There are no less than one hundred and sixty persons drowned one year with another in the river Thames; this is mentioned, because, according to the different places in which these accidents happen, so different means of facilitating the recovery of the drowned may offer themselves to the Humane who attempt this christian duty. It is now my intention to point out such means as have often been found successful on these occasions, and to add some others not suggested before, which promises success.

And it may not be amiss to observe, that the methods here proposed cannot do any harm, if they should prove fruitless; and on such desperate occasions we should exert every probable means of recovering these unfortunate persons, many of whom have been lost merely through an omission
to

to put in practice any attempts to recover them, because success was not expected. But we ought not to despair of a recovery even though the body has been drowned, or in the water for some time, but to put every method in practice; for we do not know how far the vital powers of nature may be recoverable, and we have, from the authority of the most sober and creditable writers, many and very strong proofs, that some have, by proper means being employed for that purpose, been recovered, who had lain even several hours under water *. Now supposing putrefaction not
to

* Natural historians and physicians furnish us with divers well-attested instances of surprising recoveries of persons drowned; which, if maturely considered, might perhaps let a little light upon the obscure notions about life and death.

Pechlin de Aer. and Alim. def. c. 10. gives the history of a gardener of Troningsholm, then living, aged sixty-five years, who, eighteen years before, slipped
under

to have begun, nothing more is to be done than to put the circulation into proper motion, and life speedily recommences.

Now we are very well assured that the blood does not cease intirely to circulate in

under the ice to the depth of eighteen ells, where he stood at the bottom, upright as it were, for sixteen hours; when being drawn out, and wrapped up in cloths, from the common persuasion of those people that he would recover: he was afterwards stroaked, rubbed with warm linen swaths, and air blown up his nostrils for several hours till the blood began to move. Lastly, plying him with antiapopletic and genial liquors, he was restored to life. In memory of this accident the Queen's mother settled a yearly stipend upon him, &c. Tilafius, keeper of the King's library, gives us a yet less probable history of a woman he himself knew, who, he says, was under water three whole days, yet brought to life again by the same Manner as the Troningholm Gardener. These assertions are taken from History, therefore the reader cannot believe it to be presumption of the author.

one, two or three hours after the person really appears to be dead; the heart still continuing to be in motion, though the lungs do not perform their usual office; therefore the external parts of the body being cold, the limbs become stiff, the vessels are obstructed by the stagnating humours, and the little remaining motion concentrated to the inmost recess of the heart. This points out what we are to do to recover life. In this case we are, if possible, to give vigour to the heart, by irritating its fibres, and warming the body, to relax the vessels, and to restore the juices to their proper fluidity, that the heart may again have power to actuate them as it ought to do, by which means the lungs will resume their functions and life be restored.

Water has, sometimes, upon dissection, been found in the stomachs of drowned persons;

persons ; but more frequently there is none. The largest quantity that has ever been found in this case does not exceed what is commonly taken in by drinking ; therefore this cannot be the cause of death ; nor is it easy to say how this water can have been swallowed. It is the suffocation happening from want of air which kills them ; and the water which has passed into the lungs, and is drawn in by the necessary motions involuntarily made by that origin in respiration whilst under water ; for after they are dead, no water can be made to easily enter into the stomachs or the lungs of drowned persons, by their being put again under the water. A judgment is founded upon this in many cases suspected to be criminal. This water being intimately mixed with the air which is in the lungs, forms a viscous froth, which having no outlet, hinders absolutely the functions of the lungs ; and by that means not only suffocation.

suffocation follows, but moreover the blood cannot make its due return from the head; the vessels of the brain are overcharged, and apoplexy is added to suffocation. This second cause, that is, water entered into the lungs, is not general, and in drowned persons, on examination, there has been no water found in the lungs. The truth of this observation is proved by opening of upwards of thirty drowned bodies.

The end at which we ought to aim is to cause the drowned person to unload the lungs and the brain, and to re-animate the extinct circulation.

To accomplish which we must observe,

First, That speedily after the body of a drowned person is taken out of the water, it ought not to be laid upon the cold earth, as is too usually done, but should, if possible,

sible,

sible, after being first immediately stripped of all its wet cloaths, be put in some warm place, which if the sun shines hot may be easily found: it should forthwith be rubbed and chafed with brushes or rough cloths, to make it glow all over the surface; it should be shook with the head downwards, and excited by a feather tickling the root of the tongue, or by the smoak of tobacco blown into the mouth, to vomit up any water it may have received down the throat. It should be put into a very warm bed, or laid before a very hot fire; or it may be warmed upon an hot dunghill, or an hot hay-mow; or it may be covered with baker's ashes; or if near a mill, upon the kiln where oats and corn are dried for grinding; or if this cannot be done, the people may warm it by holding the body to their own, and the life recovered by an application of animal heat; or it may be warmed, in country places, by the means

means of horses or cows, two in a stable or cow-house, being brought together, and the body laid between them, or agitated by being laid between two horses brought close together, and thus rode or drove for some time (the head of the body, during the operation, being rather inclined downwards) until very hot with the agitation; or the body well wrapped in warm flannels, may be put into a bed in the midst of three or four people, being previously violently rubbed and chafed, as before mentioned; in which state it is not to be left still and at rest, but to be agitated, tormented, turned and tossed perpetually by those with it. The body may, where they can be had, be warmed by the reiterated application of hot napkins, or such things as are at hand; hot baths, where they offer, or hot water may be used; or the body may be wrapped up in flannels made hot in boiling water, which has often
been

been done on these occasions with good success. It may be rubbed with volatile or other spirits, some poured into the nose and mouth, the temples, pit of the stomach, and the region of the heart and throat are to be washed with them. Pepper boiled in vinegar injected into the mouth is much commended; but indeed any sort of hot sharp liquor may probably answer the same purpose.

Secondly, A wholesome strong person ought to blow warm air into the lungs; and Tissot says, even fumes of tobacco, if that can be done, which may be effectuated by means of a pipe funnel, faucet, reed, cane, hollow stick, quill, or the like tube introduced into the mouth. This air, blown forcibly, the nostrils being stopped at the time, will make its way into the lungs, and, by its warmth, rarefy the air, which, mingled with the water, forms that froth by which
the

the respiration has been obstructed; and being disengaged of the water, it may escape. By this intruded air, the lungs are dilated, and, if any life remains, the circulation immediately recommences.

These will in general be found sufficient means to bring about the recovery of those who have been from four to twenty minutes under water, and are not perhaps quite cold or stiff, to excite, by the irritation of the vessels, and by gently warming a circulation of the blood towards the extremities and surface of the body, by opening the vessels and passages therein disposed, and by eliciting the blood from the heart, by stimulating that decayed projectile force which occasioned and maintained its proper velocity. This, as we have already remarked, is accomplished also by agitating the body in a hundred different manners, not suffering it ever to be

be long in a state of rest. And let me again observe, for their encouragement to proceed in this humane office, that those who are thus beneficially employed should remember to persevere in this kind duty, and not to be discouraged though many of their attempts may have proved ineffectual; for there have been numerous instances of drowned persons (who were attended by such valuable people as would exert themselves on the occasion) being happily restored, though they had appeared to be dead for five or six hours, and though many means had been tried before they began to shew tokens of returning life.

Thirdly, But when the body has lain longer in the water, and is quite stiff and cold, and appears to be irrecoverably dead, and unaffected by such expedients as have been mentioned, then, or even along with the other proposed means, with
which

which these will not interfere or be repugnant, the attendants should endeavour to excite a re-exertion of the vital functions by other more powerful incentives; sharp stimulating things may be applied to the more sensible parts, the mouth and nose, as mustard, ginger, chian-pepper, hellebore, assarabacca, sneezewort, water-pepper, and the like; and also by feathers put up the nose to irritate it, and sharp powders of snuffs or precipitate, and even euphorbium may be blown up with a quill; it may likewise be pricked with pins, lanced, or actually burned with pointed hot irons; but these last are more violent means.

Fourthly, At the same time, if a surgeon be present, he should open the jugular vein, being that large one in the neck, or if that does not bleed, the temporal artery, being that on the temples, or some other,

from

from which he may draw ten or twelve ounces of blood.

This bleeding will be of great benefit for several reasons.

First, By giving an impulse to the blood, as we always find when it is performed, to bring those to themselves who have fainted away through some impediments in its circulation.

Secondly, By this means the oppression and load is, in the most speedy manner, removed from the brain and lungs; and,

Thirdly, This operation alone causes a derivation of blood from thence. But bleeding in the foot is not, or very rarely, attended with these salutary effects; in the arm seldom, but in the jugular almost infallibly. After bleeding, as they then generally prove most effectual, the stimu-

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lating

lating means, just mentioned in the preceding paragraph, should be vigorously applied.

Fourthly, But these experiments may all of them prove ineffectual and unsuccessful. Therefore (after these have been tried by the more expert attendants) the surgeon's last resource is to bronchotomy, opening the arteria thracia, or wind-pipe; perhaps the air, rushing freely into the lungs, through such an aperture, may again put them in action, which may be also further attempted by blowing into them through this inlet warm air, by a pipe or quill, from the mouth of some of the persons present.

Fifthly, Warm clysters of milk, beer or water, with a small portion of powdered pepper, ginger, mustard, or such kinds of stimulants, may be administered; but of all the means that have been generally
I
used

used upon these occasions, none is found more successful than to inject fumes of tobacco, which should be introduced as speedily, and in as large quantities, as possible, into the intestines, by such means as offer themselves most immediately. Any kind of pipe, quill, reed, cane, bored stick, or funnel, may be used on this occasion*.

A clyster

* In the recovery of a drowned woman near Geneva, very lately, they used a lighted pipe, with the bowl covered with many folds of paper pierced with holes; by this means it was so ordered that it might be taken into one's mouth and so blown that the smoke come out from the small end of the pipe, by which (being properly applied) a large quantity of vapour was injected into the intestines; which having been done for about five blasts, a rumbling began to agitate the belly of the drowned person; after which the mouth discharged some water, and in a few minutes she began to revive. One may also, on these occasions, and to hasten the conveyance of smoke to the intestines, light two pipes filled with tobacco, and, having put the small end of one of them up the fun-

A clyster of this smoak may be blown warm by the fundament into the intestines or guts; by which means, being warmed and comforted by the insinuated vapour, they will be excited to motion, and may communicate to all the parts around them an exertion of vital energy to the recovery of life. And as this expedient may be

dament, apply the mouth or bowl of the other lighted pipe to the bowl of that, and then blow a strong blast through both pipes into the bowels of the drowned. This is a very easy, and often a most effectual expedient. Or a clyster-pipe may be tied to a bladder which may be filled with smoak of tobacco, by putting the pipe of a tin funnel through a hole cut into the other end of it, and holding the broad end of the funnel over burning tobacco, so as to direct and receive all the ascending fumes into the bladder, and to keep them in, by stopping the clyster-pipe, until the bladder is full; then tie up the hole where the funnel entered and open the clyster-pipe, and inserting it, force the fumes into the drowned, as beforementioned, in the way clysters are generally administered,

pronounced

pronounced the most effectual, and that which generally succeeds when all others have failed, we hope, for the good of humanity, that those who are employed in the very praise-worthy office of recovering the drowned, will not, from any motive of levity, reject or be prevented employing the same (as no harm can possibly attend it), lest a life should be lost merely for want thereof.

Sixthly, Whilst the drowned shews no signs of life, it is of no benefit, nay it is even dangerous, to put into the mouth a great many liquids, as they will only tend to continue the suffocation. There ought only a few drops of some irritating or sharp liquor given, from time to time, by way of exciting. But as soon as any signs of returning sense begin to appear, about six or seven spoonfuls of the oxymel of squills may be given in warm water;

or if that cannot be had, as will probably be the case, a strong infusion of carduus, camomile, sage, centaury, hops, and such sort of herbs, may be administered. Some will, in haste, give warm water with salt in it, and it is not amiss. Others recommend vomits to be given, but they sometimes prove inconvenient; and the oxymel is not to be given as a vomit.

Seventhly, These expedients must not be discontinued so soon as the drowned begins to receive relief; for sometimes they die after some faint tokens of recovery, therefore we should persevere in our good endeavours.

Now with regard to seamen, it must be acknowledged, that they are very dexterous, industrious, alert and diligent to recover those who, in these circumstances, are objects of their most laudable concern: they
 exert

exert a more than ordinary zeal for the recovery of such unfortunate objects, and generally try very philosophical and judicious means for that purpose: with great prudence they rub the body with coarse linen, they cover it with their cloaths, and expose it to the sun-shine; if it happens at that time, they place it upon a cask, or in a cask opened at both ends; they rub, roll, torment and agitate it with such velocity as makes it very warm, by which, and the smoak of tobacco properly employed, they seldom fail of recovering those who have been drowned, except they have remained so long under water as to render all attempts fruitless.

Having now shewed the necessary succours, and those which always prove the most effectual, I shall say a few words of some others, which are generally used in hurry and extremity upon such occasions.

First, These unfortunate persons are sometimes wrapped in the skins of sheep, cows or dogs, which are instantly slain for that purpose; this recourse has been known to succeed, but it is in general later before it has effect, and is no more to be relied on than a bed well warmed, fumigated with burnt sugar, and frictions of hot flannel applied to the body.

Secondly, Rolling in a cask is dangerous in some respects, and is much more so as it tends to lose time, which, in such emergencies, is extremely precious.

Thirdly, Hanging up the body by the feet is also not without danger, and is of no advantage at all. That froth above mentioned, which is one of the causes of death in these cases, is too adhesive to be evacuated merely by its own gravity; yet
this

this is the only benefit to be expected from such suspension, which is very pernicious in other respects, as it contributes to increase the congestion, or load, which already lies upon the brain and choaks up the lungs.

We shall now beg leave to mention a few, but very promising, methods that may be used, when circumstances permit.

It sometimes happens to be convenient to cover the body totally (except just the nose and mouth) with wood or other warm ashes* ; dry salt, or any kind of chalky powder,

* Tissot, Avis au Peuple, vol. ii. chap. 28. says,
 “ It is now many years since a girl of eighteen years
 “ of age was taken out of the water, in which it is
 “ uncertain whether she had been some minutes only,
 “ or some hours ; for she was quite motionless, stiff,
 “ and insensible, her eyes fixed, her mouth open, her

powder, which has an absorbent or drying quality, may be happily employed the same

“ colour livid, her face bloated, the body swelled,
 “ and charged with water; yet she revived by being
 “ extended upon a bed, covered four fingers deep
 “ with ashes, instantly made hot in cauldrons, with
 “ which the body, being naked, was instantly covered,
 “ and hot ashes repeated as fast as possible, or as the
 “ former grew cool; besides which, she had a cap
 “ with hot ashes in it put upon her head, and round
 “ her neck a cloth was wrapped filled with the same;
 “ a quantity of hot bed-cloaths being laid over all.
 “ Having remained in this situation for half an hour,
 “ the pulse began to return, and she soon resumed
 “ her speech, and called out, *I am frozen, I am frozen.*
 “ A little weak brandy was immediately given her,
 “ and she was left under the ashes eight hours, when
 “ she got up, without any other complaint than a
 “ lassitude, which went off on the third day follow-
 “ ing.”

This is certainly a very effectual method, and not to be neglected; but the same time other co-operating means ought to be tried; sand mixed with salt may prove

same way; this powder should be warm, or even hot, before it is used. Of these latter

prove equally serviceable, and the good effects of it have been proved. But I beg leave to observe here, that the salt thus used should be previously very well dried, almost burnt, and in this case it acts as an absorbent. But chalk or lime, or ashes, if hot, as is said above, are preferable to all other applications; and this opinion is strengthened by the experience made upon several drowned animals, which, when covered with chalk, lime or ashes, exposed to the hot sun, or before a good fire, speedily revive, even though they have been an incredible time under water.

“ This moment,” says Tissot, “ we have just received two little puppies which had been drowned; the method we took was the hot ashes as above described.”

And, by the testimony of a person of credit, the method of the hot ashes contributed very effectually to the revival of a man who had certainly been six hours under water.

latter none is more proper than the powder of fresh slacked hot lime applied for a few minutes; but it must only be thinly strewed on the naked body, and should be also mingled with the chalk or some other absorbent matter, of a property less sharp and biting than lime. But as we have already noted, and now repeat the same, nothing is better, on these occasions where-with to cover the body, than the warm ashes of any kind of vegetables, which often happen in country places, as near brick-kilns, mills, bake-houses, glass-houses, malt-kilns, &c. and to be very convenient; and yet this is too often neglected, or not done, because the great good effects of these means have not before now

Tissot, in a note to his work, informs us that, in June 1761, two men were happily recovered after being under water thirty minutes, by employing some of the above means, of which many of the assistants had copies.

been

been published or generally known to mankind.

I have now something quite new to propose on this head, which I only offer as it may be worthy of experiment, where circumstances permit, and I would be understood to intend, that it should not prevent the trial of the methods already mentioned, because I advance it not as an approved, but only as a very probable expedient for the recovery of the drowned. Would it then be amiss to try the effect of a strong electrical shock (but this would depend upon an apparatus or machine for that purpose being at hand, which seldom happens but in towns)? for what we want, as has been said above, is to give a sudden shock to the whole convulsion of fibres, external and internal, composing the body, to irritate the vessels and nerves by a quick and smart impression, and to agitate the
before-

before-stagnated fluids into a vigorous motion.

Now, when drowned persons are perfectly recalled by the above, or any other, means, they will, as it is usual, remain greatly oppressed; there will come on a cough and fever, and, in short, be still very much indisposed: it will, therefore, sometimes, be proper to bleed them at the arm, and to let them, for a while, be well supplied with cooling decoctions, baum-tea, or barley-tea, and the like diluting liquids.

Thus having pointed out the most probable and practicable method for the recovery of drowned persons; from which in a few words, it will appear, upon a concise recapitulation of what has been said, that the body, just taken from the water, should immediately be warmed by every possible means that can be advised. It is to be rubbed,

rubbed, agitated and inverted, to be provoked to vomit, to be irritated by soft and pungent things applied to the tenderest and most sensible parts, and by the injected smoak of tobacco, &c. opening a vein or even an artery, is to be tried. Finally, the wind-pipe may be cut, to admit an attempt to reanimate the lungs by the inspiration of warm air into that organ. Again, the electrical shock promises, from its general effects (though all the above means should prove fruitless), to bid very fair for success; and, therefore, may not be unworthy, as often as it can, of being united with them, and for that purpose it is here recommended.

Nothing can be more distant from ridiculous than such benevolent offices as these. Humanity is called, in the most moving accents, to exert itself in this sublimest of all virtues,—the attempt to re-

cover

cover perishing lives. And what can inspire a good heart with more sincere, perfect, conscientious and commendable satisfaction, than a retrospect of such endeavours as have been generously exerted and successfully contributed to recover, perhaps to restore, the life of a fellow creature from that most deprecated calamity—sudden death, with its alarming retinue of threatening consequences to those who die unprepared? since by thus preserving a sinner to a future period, perhaps a soul may emerge in full maturity to felicity, which shall have no end.

REMARK, “ If a reward was given to all
 “ those who should recover a drowned per-
 “ son above what the gratitude or circum-
 “ stances of the saved person may permit ;
 “ and to facilitate this, the most easy and
 “ proper means to be employed on such
 “ occasions might be printed, and put up
 “ in

“ in some public part of all churches and
“ chapels, to encourage every one to do
“ his utmost on these occasions.”

Dr. Wilkinson's
Tutamen Nauticum.

SECT.

SECTION III.

AN INQUIRY INTO THE VIRTUES AND PROPERTIES OF MILK, AS AN ANIMAL FLUID, AS FOOD, AND AS A MEDICINE.

MILK is a liquid prepared from the aliment chewed in the mouth, digested in the stomach, perfected by the force and juices of the intestines, and elaborated by means of the mesentery and its glands and juices, and the juices of the thoracic duct; it has undergone some actions of the veins, arteries, heart, lungs and juices, and begun to be assimilated, yet may still be had separate, and discharged out of the body.

And thus, by their own milk, prepared from the proper matter of the chyle, all known lactiferous animals are nourished,
both

both male and female; for milk is always prepared from the chyle, as well in men as in women, in virgins and barren women, in mothers and nurfes; whence every fuch animal confifts, is nourifhed, and lives on its own proper milk; and from this alone prepares all the other parts, both the folid and fluid, by means of the vital actions. It is alfo certain, that men may live for years by feeding upon milk alone, and perform all the actions of life, and have all the folid and fluid parts of their bodies perfectly elaborated; the ferum therefore, the blood, the lymph, the fpirits, bones, cartilages, membranes, and veffels, proceed from milk; and if a man may live many years upon milk alone, milk muft contain in itfelf the matter of all the parts of the human body. Milk approaches nearer to an animal nature than chyle; the chyle of the intefines is nearer to a vegetable nature, and that of the ftomach neareft: and
hence

hence we find the phænomena and of fermentation and putrefaction in the stomach and intestines; such as acid eruptions, foetid smells and the like; for this chyle is a true emulsion, prepared by the grinding of the teeth, the tongue, the stomach, and the intestines along with the saliva, the liquor of the stomach, the pancreatic juice and bile in the intestines, and hence proceeds milk.

If this milk be good, and suffered to stand in a clean vessel, it first appears uniformly white, thick, unctuous cream to its surface, and remains somewhat blueish below. If the cream be carefully taken off, the remaining milk produces more. The same thing happens in emulsions. The milk of all the known animals has this property of whiteness. The human milk is very sweet and thin, the next is that of asses, then that of mares, then of
goats,

goats, and lastly, that of cows; whence it is prescribed in this order to consumptive persons of weak viscera. But though milk resembles vegetable emulsions in several respects, yet differ in others. The rennet prepared of the juice in the stomach of such creatures as chew the cud, being mixed with milk, coagulates into an uniform mass, which may be cut with a knife, and it thus spontaneously separates into whey and curd; but this does not happen in emulsions. If long boiled over a fire, it loses its more fluid parts, and condenses into a butyraceous and cheesy mass; but not into an uniform one that will cut, like the dried serum of the blood, or white of an egg. It has a pleasant taste, and no unpleasant smell; it is extremely mild, and of a middle nature between blood and the chyle; and hence proves different, according to the aliment and the creature that prepares it.

Neither

Neither the smell nor taste, nor the dropping new milk into the eye, manifests any acid, alkaline or saline matter to be contained in it. If milk be heated, and successively mixed with pure volatile and fixed alcali, there arises no effervescence which shews any acidity; but the milk grows somewhat thick and turbid. To other parcels of the same milk add the acid spirit of vinegar, of nitre of salt, and of vitriol, and these make no effervescence, so as to manifest the milk to the alkaline; but thicken and coagulate it: but upon mixing milk, to which oil of tartar per deliquium was poured, with some oil of vitriol, there immediately arises a violent effervescence, and much greater than if the same quantity of alcali was added to pure oil of vitriol. If new milk be digested in a glass alembic, with a fire about one hundred and sixty degrees, there comes over an aqueous liquor,

quor, without any signs of an inflammable spirit; nor does this liquor give any chymical signs of being either acid or alkaline upon mixing with either acid or alkaline salts: it also appears not to contain any saline matter, being inodorous, and perfectly insipid, and causing no pain if dropped into the eye. There remains behind a yellow thick unctuous mass of a sweet and grateful taste; which mass gives not the least appearance of containing any thing acid, alkaline or saline, upon all the trials made to discover it: this is the true nature of milk thus variously examined.

MILK DIET.

Doctor Cheney says, “ I have given preference in a low diet, both from observation and experience, to milks; such as asses’, mares’, cows’, goats’, and womens’; all
“ of

“ of them excellent in their kind, and preferable in this order.” Milk is a medium between young animal food and mere vegetables. Milk is white blood already made, adjusted to all the meanders of circulation, and prepared by the hand of nature, and intended and signatued by its author, for the curing, nourishing and fortifying of weak, tender, and diseased animals. Asses milk needs no concomitant, but in extremely bilious stomachs; and I question whether testaceous powders, joined with it, do not hurt instead of benefiting the patient. If it purges, or even curdles, that is of no great disadvantage to the patient, if he is not quite gone; for that curdling shews great redundancy of gall, and an inflammatory state in the chyloferous tube, which requires vomiting, purging and cooling, which the asses milk will do most gently and safely in some; and in a short time these effects will cease, or may be easily removed

moved by a little decoctum fracaſtorii at night, or Spa, or Pyrmont water, or Briſtol, or any chalky water, for common drink, when the ſymptoms exceed. But to be uſeful in very tender caſes, aſſes' milk ought to be eſteemed food rather than phyſic, and taken accordingly; and tender perſons, eſpecially in inflammatory caſes or diſeaſes, with acute pains, ought to live on it, and take it in ſuch quantities as they can bear. All cachochymic, conſumptive, thin, or atrophous perſons, ought to enter upon it directly, and continue it twice or three times a day, till they are quite recovered; for I know nothing in nature that will ſo ſoon recover and plump up the muſcular fleſh and habit as aſſes' milk long continued; for all chyle that nourishes muſt firſt be reduced to the nature and conſiſtence of aſſes' milk, eſe it will never kindly paſs into the lacteals. I ſay nothing of mares' milk, becauſe it is not much in uſe in
F England,

England, though much admired in eastern counties.

Some persons have a natural aversion to cows' milk; with others it curdles, and either binds too much or purges, or so inflates or comes off in phlegm, that they cannot take it without abundance of pain and sufferings; which is an infinite loss to them, it being the gentlest, safest, and most certain and universal antidote in all chronical distempers, without exception of one. The only certain way to make it agree, is, first to cleanse the primæ viæ by vomits, or an aloetic pill now and then, mixing the milk at first with Bristol or any soft but chalky water; make it into a gruel or pudding, with seeds, as barley, oats, wheat, sago, rice, and the like, putting sometimes a spoonful of white wine to it, making bread into biscuits, with sweet cows' milk without yeast or salt,
with

with a quick firing; take a little at a time, but often: or lastly, putting a spoonful of compound peony water into a quart, or a tea spoonful of spirit of hartshorn to a pint, and thus gradually carrying off the load, heaviness and flatulence, or tumult it seems to raise, which intirely proceeds from the ill state of the stomach and bowels, that by a distemper are loaded with wind, choler, and phlegm, where the concoctive powers are inflamed greatly, the glands tumid, the lacteals obstructed, the perspiration stopped, the blood viscid, and all the functions in a ruinous state; and not from the nature of milk, which is the mildest, softest, most nourishing, and salutary of all foods; and the vulgar error of its being phlegmatic, is, from its being the best and most effectual of all balsamics and all lambatives; as we see it is formed by the hand of nature for the young, that is, the weak and tender; and there is no real difference

between a weak and tender animal by nature, and one made so by disease; but that the case is much worse in the last than in the first; and therefore this natural antidote is more than necessary in it; and I never knew one who laboured and endeavoured heartily at it, but at last overcame those difficulties, to his great pleasure and satisfaction, unless the case was totally gone. Drinking a little green tea, or tepid barley, or Bristol water, when it oppresses, will help it off, and greatly relieve. What makes milk at first so disagreeable, painful, and oppressive, is, the inflammatory, bilious and acrimonious state of the stomach and bowels, which presently turns the milk into a hard cheesy curd, and sends off the whey into the lacteals too thin and too fast. Nothing in milk but the sweet white whey, that is the serum, with the lightest and smallest particles of the curd, nourishes, or can enter the strait or invisible mouths of
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the lacteals; and hence only is the nutritive virtue of asses', womens' and mares' milk, and goats' whey. Strong rennet, or any strong acid, will turn milk into a hard cheesy curd, which will neither come up nor go down, without much labour, trouble and oppression, especially in weak or bilious stomachs. Weak rennet will make a tender curd, which will easily slide off. So that the whole art of making milk agree with any stomach, is, to prevent its turning into too hard a curd, which any alcali will do; sugar, crabs' eyes, chalk, the volatile spirits and the like. As the viscera cools, and the choler lessens, the disorders from milk cease. — However, I should advise those whose stomachs abound with bile, and so are in an inflammatory state, to live on seeds, mealy and soft roots, and well-dressed vegetables, for some time, especially those who have bad livers, and an overflowing of the gall; for as to consumptive,

scrophulous, scorbutical, diabetical, and cancerous cases, milk and feeds are the best antidote, and seldom disagree. I have been told of two pigs, one fed with the same quantity of milk, the other with sweet cow whey. The last became the fattest, whitest and sweetest. But the most infallible remedy is, for a long time to chew a little good bark at noon, and some rhubarb at night constantly, at least till this difficulty be overcome. The first gives a tension and spring to the coats of the chyloferous tube; the second does not only the same, but also carries off the load and superfluity from it, before it accumulates and acidulates too high. Sweet cow whey, or orange whey, is an admirable antidote in scorbutic and cacochymic habits, in bilious vomitings, and hectic and slow feverish cases.

Goats' milk, or rather its whey, is a wonderful strengthener and cleanser. It is
surprizing

surprizing to me, that our countrymen, after they have heard of the many great cures, in deplorable cases, performed by drinking goats' whey in Scotland, Ireland, and Wales, with a proper regimen of diet, air and exercise, do not more generally apply to it at first in low consumptive, wasting, scorbutic, and cachectic cases, or in all viscid or inflammatory juices. It was in great esteem among ancient physicians; and the goats feeding in a pure air and high places, on the most tender, light, and aromatic plants, must communicate a spirit, balsam, and sweetness to the whey, and consequently to those who use it frequently and plentifully, and accordingly we find its efficacy: it generally purges, opens, cleanses, cools, and balmifies; and must surely be a more natural and gentle diluent than any artificial diet drink whatsoever; and in scorbutic, bilious, and inflammatory cases is a most sovereign antidote.

But it is common to see the most obvious, natural and simple, but most beneficial and sanative things, slighted and overlooked, while new, foreign, costly and complicated ones are admired; but time and suffering will give experience and wisdom, if any thing will.

I must here say something of womens' milk, which is indeed most natural and homogeneous to human bodies in very low consumptive cases, and is found very beneficial in them; not only to the young and tender, but to the ancient tender, and the middle aged, worn out by diseases. This milk would be intirely more beneficial and salutary, were it not for the rank, high, foul feeding, and common uncleanness of nurfes, and such low-conditioned persons. If nurfes lived on cows' milk, feeds, roots and vegetables, well dressed, and drank
nothing

nothing but toast and water, or barley-water, or unfermented liquors, and were kept clean and sweet, their milk, passing through infinitely more fine and delicate strainers than those of any brute animal, would be a real nectar in atrophies, paralytic and nervous cases. But on the contrary, as things are now constituted, nurses are the most humourous, voluptuous, and domineering persons in a great family; and if food and nutriture can have any influence on the body, humours and passions of the child, I think it is as necessary to have an healthy, clean, sober nurse as such a mother, for the heir of a noble family; since it is certain the child is fed and increased as much and is longer under the nurse's juices and humours than it is confined in the mother's bowels; and, without all doubt, the body, humours and passion, partake of the materials with which children and even grown persons are fed and

nourished, as constant experience and observations testify. And I should rather confine myself to the innocent and undiseased nourishment of water-gruel, cows' milk, and seeds, than to the milk of a foul, rank, luxurious and vicious nurse.—Cheyne's method of cure in diseases of body and mind.

The same author, in his English Malady, further gives his sentiments of a milk diet in the following manner.—For those whose constitutions are spoiled, who have bad or corrupted juices, violent and dangerous symptoms, great obstructions, are subject to the great and imminent degrees of these disorders, are threatened with an hectic or consumption or destruction of some of the great viscera, and who have tried all the other methods and medicines that could be suggested without success; for those I have found no other relief than a total abstinence

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nence from animal foods of all kinds, and all sorts of strong and fermented liquors, keeping only to milk with seeds or grains, and to the different kinds of vegetable foods, according to the nature of the distempers, from which they have never failed to find a present relief and a considerable abatement of the violence of their symptoms. Many have been led into this method without any advice or direction, but merely from their own feelings, and observing what they were easiest under. And many more have been absolutely cured and freed from all their disorders by it; some even from a very short time after they entered upon it; and others in a longer or shorter time, according to the obstinacy of their distemper, if the disease has not been so far gone as to be past all possible relief from natural means. In these last cases it has done all that was in the power of art, has lessened their miseries,

and protracted their fate, and has given more ease and quiet than they could receive from any other method they could turn to, except opiates and anodynes, to which one is never to give himself till he has given up all hopes of a total cure. Where the nerves and solids are naturally weak, or the persons subject to nervous disorders from their infancy, there is no method will absolutely free them from slight returns of their former symptoms; but this diet I have found to do more than any other method whatever. However, no one ought to undertake this regimen without the advice of some honest, able and experienced physician, who has considered his case and constitution, and can direct him right in the proper management of it, and the method of keeping up the due tensions of the solids, which such a diet may sometimes probably relax while it is purifying the juices and cleansing the habit; and can
likewise

likewise judge of his constancy, firmness and resolution to go through with it. Since in some deep-rooted and confirmed distempers of this kind, though the patient may find a considerable relief for many months, yet possibly, when the gross impurities, the choler, phlegm and salts, stored up in the habit, raise sickness, lowness of spirits, and a return of all or many of the former symptoms, this may blast all his hopes, and mightily discourage him, and make him condemn the method and blame the physician who advised him. But if he stands this shock with firmness and patience (which will be readily relieved by proper evacuations, volatiles and astringents), he may be assured of success, and his perfect recovery is at hand. But as there are incurable disorders which no medicine or medicines will reach, so it frequently happens in this. And even after the patient is recovered by this method, he must resolve

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to continue in it ever after, at least not to indulge himself in a much higher degree of food, without suffering presently or hazard- ing a return of all his disorders; for, as Celsus observes, in all disorders of the stomach, by whatever method the patient is recovered, he must continue in the same when he is well, for the disease will return unless health be protected by the same means that restored it.

I would not be understood here (as some have maliciously and artfully represented me, contrary to my most deliberate intention) to recommend a total milk and vegetable diet, or indeed any particular one, to every one that is sick and out of order. I never once had such a dream. I have given the preference, in my Essay on the Gout, to the common diet of well-chosen flesh meat, and good middling ripe wine, even in that obstinate and painful distem-
per,

per, commonly treated by a milk diet. And, in my Effay on Health and Long Life, I have endeavoured, as far as I could, to enable the patients to make a proper choice of animal foods fit for his constitution and the disorders he labours under; and have, from considering the nature of the distemper, actually ordered some who were in a vegetable diet to change it for an animal one. A total milk and vegetable diet (besides its being particular and inconvenient in a country where animal food is the common diet, and affords no sufficient store of animal or mechanic strength to persons naturally weak, or who have not been habituated to it from their cradles) may bring the patient into such a state, that, without the utmost risk or danger, he can never leave it off again: and, while he is under it, by relaxing and softening the solids in some degrees, when it is sweetening the juices, it brings him under a
necessity

necessity of keeping up their tension with proper astringent, warm and cordial medicines (which are of the same nature with a more generous diet) and incessant labour and exercise. And in gross, foul bodies, or those subject to goutish, scorbutic or other inflammatory disorders and paroxysms, it requires the utmost care and caution that the disease be not thereby at first thrown inwards, and so the extreme degrees of vapours, lowness, and other nervous disorders ensue, which this diet is designed to prevent. Indeed, there are some cases wherein a vegetable and milk diet seems absolutely necessary, as in severe and habitual gout, rheumatism, cancerous, leprosy and scrophulous disorders, extreme nervous cholics, epilepsies, violent hysteric fits, melancholy, consumptions, and the like, and towards the last stage of all chronic distempers. In such distempers I have seldom known a milk-diet fail of a good

good effect at last; but in most other chronical distempers, nervous or humorous, and in all their tolerable degrees, and first and second stages, a common, middling, plain and moderate diet, is certainly the best and safest. A little animal food of the youngest, lightest, tenderest, thinnest, and sweetest kind, and a small proportion of generous liquors, to keep up the due tension of the solids, under the regulations I have mentioned, weak broths and soups made of tender, young, animal substances, without fat or butter, and thickened with a due proportion of vegetable seeds or grains, such as those of wheat, barley, rice, sago, oats, millet, and the like; such a diet, I say, in my opinion, answer all the ends of a pure milk and vegetables; and as I have found such a one less dangerous, so it is an easy regulation, as things now stand, and wants only a few months in the same course of that cure, which might be
gained

gained by going into such a particular method of diet. I am never for entering upon extreme or uncommon means of diet or medicine, but in extreme and mortal cases; for I always think that common sense is the best indication of a sound mind, and common life the best means of a temporal happiness, else they had never been common.

One great advantage that a milk and vegetable diet has over a flesh and animal one, lies principally in this, that one may thereby avoid loading the juices with too much salts of any kind, or thickening them with more gross, hard, earthly particles, or such as cannot be broke or comminuted by the natural force of the weak solids, and by it patients will not be so easily led into errors in the quantity, nature not being tempted to receive or retain such unprovoking and impoignant viands; whereby
they

they avoid the snare and temptation that liquorishness and high relish throws into many. Another advantage is, that it effectually dilutes and cools too thick or hot juices, and that a sufficient quantity of it may be taken to keep the bowels and blood vessels full and sufficiently turgid; whereby the circulations, natural evacuations and secretions will be more naturally carried on in such weak habits, than can possibly be under an animal diet, of so small a quantity as must be necessary in such cases, unless it be extremely diluted in water and the farenaceous vegetables, which bring it to the same state. And therefore, in greatly-depraved habits, and such deep and dangerous habits as I have mentioned, it is the most proper and absolutely necessary regimen to carry on the natural functions without pain and uneasiness, and to preserve the sides of the capillary vessels from coalescing and growing together,

together, and so preventing irremediable obstructions; though in other more slight cases it may be not necessary, but even sometimes inconvenient and hurtful; for though it will always produce at length freedom from pain and freedom of spirits, and a greater capacity for intellectual functions, yet it will never beget mechanical force and strength, or an hardy strong constitution, which, in some circumstances, employments, trades and professions, is indispensably necessary; so that such a course and regimen is only proper for those who follow intellectual occupations, and expect chiefly mental pleasures, freedom from pain, cheerfulness, and length of days; or, in short, for the studious and sedentary.

A total asses' milk diet, about two quarts a day, without any other meat or drink, will, in time, cure a cancer in any part of
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the body, with mere common dressing, provided the patient be not quite worn out before it be begun, or too far gone in the common duration of life ; and even in that case it will lessen the pain, lengthen life, and make death easier ; especially if joined with a small interspersed phlebotomies, millepedes, crabs' eyes prepared, nitre, and rhubarb properly managed. But the diet, even after the cure, must be continued, and never after greatly altered, unless it be into cows' milk with feeds. Any cancer that can be cut out, contracted and healed up with common, that is, soft, cool, gentle astringent, dressings, and at last left as an issue upon the part, by a cow-milk and feed diet, ever continued in, may be made as easy to the patient, and his life and health as long preserved, as if almost he had never been afflicted with it, especially if under fifty.

A total

A total milk and feed diet, gentle and frequent phlebotomies, as symptoms exasperate, a little ipecacuanha, or thumb vomit, repeated once or twice a week, chewing quill bark in the morning and a few grains of rhubarb at night, will totally cure consumptions, even when attended with tubercles, an hemoptoe, and hectic, in the first stage; will greatly relieve, if not cure in the second stage, especially if riding in a warm clear air be joined, and make death easier in the third and last stage.

A total cow-milk diet, about two quarts a day, without any other food, will, at last, totally cure all kinds of fits, epileptic, hysterical or apoplectic (which are all but degrees or symptoms of one general disease, which I call scorbutic-nervous, or the plain scurvy-grass in its last stage) if entered upon before fifty. But the patient, if

near fifty, must, ever after, continue, in the same diet, with the addition only of seeds, otherwise his fits will return oftner and more severely, and at last cut him off.

A total cow-milk diet, without any other food, will bid fairest to cure a hemiplegia, or even a dead palsy, and consequently all the lesser degrees a partial one, if entered upon before fifty. And this distemper I take to be the most obstinate, intractable, and disheartening one that can affect the human machine, and is chiefly produced by intemperate lechery, with its necessary attendant habitual luxury. It may be retarded in its progress by strong vomits, mercurial and fœtid gum medicines, air, gestation, the *pilulæ æthiopicæ* of the Edinburgh Dispensatory of the last edition, with water beverage, and mineral water, and cold or hot bathing in the respective seasons; but this is never to be eradicated,

eradicated, if the stroke is deep, or life far spent, except by cow-milk only.

A total milk and seed diet, with gentle vomits before and after the fits, chewing bark in the morning, and rhubarb at night, with phlebotomy about the equinoxes, will perfectly cure the gout in persons under fifty, and greatly relieve those farther advanced in life; even those who have chalky nodes and fixed joints, especially joined with air and exercise, and strong and constant friction; but must be continued ever after, if such desire to continue well.

These cures I have known; so that they may, with high probability, and medical certainty, be depended upon. The following are reasonable and probable, but not so certain for want of sufficient experiments.

ments. A total milk and seed diet, with purges now and then, as manna and cream of tartar, or Glauber's salts with a pill of the precipitate per se, or pills of the mercurius alcalifatus, with terebinthina cocta, will, in six weeks or a month, totally cure and eradicate any venereal distemper in its first stage, or while it is only termed a Gonorrhœa Virulenta, without other symptoms, if bark and rhubarb are chewed for some time after, to consolidate and constringe.

A total milk and seed diet, continued for six or eight months, will totally cure and extirpate venereal distempers in their second state, when they may be called the Great Pox, with buboes, cancers, and cutaneous defedations, if pills of precipitate per se, or of mercurius alcalifatus and gum guaiacum with the unguentum Neapolitanum constantly applied, be persisted in during

that time; which may be done without keeping house, or interruption of business.

In those who, for the last stages of the venereal disease, have successfully gone through a full salivation, a total milk and seed diet, long and strictly continued in, would certainly cure and eradicate the distemper, if no other hereditary disease be complicated with it; whereas, in the common management, a total cure is seldom to be obtained, and thereby many are miserable all the days of their lives.

An habitual asthma, if managed with a milk and seed diet, quicksilver well purified, half an ounce twice a day, squill vomits about new and full moon, and after these the squill pills of the Edinburgh Dispensary, might be totally eradicated, especially if a southern climate and warm clear air were joined.

In a painful and dangerous pleurisy, after a good part of the size of the blood has been drawn off by large phlebotomies, and the distemper, by saponaceous and oily emulsions with volatile alcalies, is lessened, if a total milk and feed diet were instituted and duly persisted in, the blood and juices would thereby, in time, be sweetened, and a return, a phthisis, and an empyema be effectually prevented.

A milk and feed diet, with vomits of ipecacuanha, and a few grains of tartar emetic, repeated every new and full moon, in the intervals, alcalifatus and pills of gum guaiacum continued, and when the blood is sufficiently attenuated and the obstructions opened, if cold bathing, with vegetable astringents, bark especially, were employed to finish the cure, and the same regimen ever after continued, this method, I think,

would sooner, and more durably, cure and extirpate all kinds of manias, frenzies, and madness (which are so shamefully frequent in Britain), than the common one of treating them with tearing emetics and scraping cathartics under the usual full strong diet of animal food; which does but add fuel to the distemper, and returns in a greater or lesser degree to the party or his posterity.

In any hæmorrhage, either from the lungs, nose, anus or uterus, how violent soever, if, after some repeated phlebotomies to moderate the flow, the use of vitrium antimonicerat. and Bristol water, or the tinctura rosarum with bark, in substance, extract, or decoction, were freely administered, a total milk and seed diet was ordered and duly prosecuted, it would totally cure those symptoms, would at last sweeten and balmify the blood and juices, and prevent

returns;

returns; for all hæmorrhages are of the same inflammatory and acrid nature, differing only according to the part where the capillary vein happens, and suppose a thick curd and a sharp serum in the blood.

A jaundice, black or yellow, proceeding from a spoiled or obstructed liver, a viscous or morbid bile, or biliary stones, which prevent the separation of the choler and its passage into the intestines, by which means it is forced back into the veins, is rarely, or perhaps, never to be totally cured by a milk and feed diet, frequent and active vomits, saponaceous emulsions, with volatile alcalies, mercurial plaisters on the region of the liver, Bath waters, and a constant riding. This method I know, from experience, will perform a total and lasting cure; and otherwise I never saw it effected.

A total milk and seed diet, with sole water beverage, would, at last, extirpate any degree of the scurvy, scorbutic ulcers, and impostumated glands, even the lepræ Græcorum and arabum, or at least make them infinitely better, if duly continued, and Æthiops mineral, cinnabar of antimony, or the aqua argenta, were joined to it in a long continuance.

Of all others a total ass milk diet is the coolest, and most sweetening, and restorative possible; next to it is cows' or goats' milk whey, if not too flatulent or purgative; cow-milk, boiled or raw, for the whole food, is next in degree to these.

OF THE MILK OF NURSES: CAUTION CONCERNING IT: OF THE BREASTS OF WOMEN.

LA MOTTE affirms, that, in abundance of experience, he has always observed that milk which is the thinnest to be best; in-
fomuch that he feldom failed telling the condition of the child by seeing the nurse's milk; for the child that sucks milk which is clear and thin, is generally fresh, plump, and healthy; on the contrary, when the milk is thick, the child is lean, very hot and sickly.

He also remarks, that, those children which suck thick milk, feldom wet their beds; but those who feed on that which is thin and clear, wet them abundantly.

If milk which is clear has a sweet agreeable taste, as if it was sugared, and spins

out of the breast with impetuosity when a little pressed, it is a sign the nurse has a great quantity, and then it runs out of the breast spontaneously in a very little time after the child has sucked.

The milk which is thick has often a bitter, salt, or some very disagreeable taste, and drops from the breast when pressed. Mean time the breast is soft, a sure sign that it does not fill with milk.

In order to taste the milk, the mouth must be several times rinsed with water, and some milk must be put upon a plate and a few drops may then be tasted.

Large breasts are subject to have but little milk. Breasts that are moderately large, with a red nipple, that hangs free, are to be preferred.

It

It is difficult to judge whether a nurse is with child or not, because they seldom have the first symptoms of pregnancy, as sickness, vomitings, and the like.

When the nurse is with child, the child that sucks of her grows ill, the nurse becomes thin and lean, and the milk diminishes: but this does not always happen before the nurse is far advanced in her pregnancy.

Nurses that have the menstrual flux, are sometimes not the worse for it, provided the child does not grow ill with their milk; but they are never to be chosen, for the child, frequently during the flux, will suck, and is ill. Instead of all the boasted applications to the breasts, in order to dry up the milk, apply a soft warm napkin to them, and not to let them be cooled or

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touched,

touched, let the pain be never so violent. The greater the violence and impetuosity with which the milk comes into the breasts, the sooner the pain ceases; especially if it does not run out; for if it does, the pain is less, but continues longer.

Care must be taken, when the milk runs out, to change the cloths frequently, for fear the breasts should take cold, and the milk curdle in them, and cause a tumor.

Great care must also be taken that a woman takes no cold at her arms and hands. She must therefore wear her shift very low, and wear gloves or mittens; for cold, taken at the hands, will cause tumors in the breasts. For this reason it would be most prudent to keep the hands constantly in bed, if it can be done without causing slight vapours, as it sometimes does.

• Taking

Taking cold at the feet, will also cause a tumor and abscesses in the breasts.

I shall now proceed to define the excellent and salutary qualities of whey.

So great is the divine Providence to mankind, that we are not only supplied with a wonderful variety of efficacious remedies, for the prevention and cure of so great a variety of diseases, from the vegetable, animal and mineral kingdoms, but our daily food is also endued with virtues adapted to the removal of the most acute distempers. Milk is an evident instance of this, which, as it is perfectly suited to the nourishment and support of the body at every age, in every disposition and temperament, so it is, beyond all dispute, intitled to the superiority among the safeguards of health,

health, infomuch that we hardly find any thing in nature either so safe or efficacious as this liquor. But as the most excellent remedy, ill prepared or imprudently administered, is prejudicial, so may milk of any sort, and the use of it be attended with ill consequences; for the nature and disposition of all food and medicine is such, that it has both a salutary and noxious principle; and in consequence, unless the latter is skilfully corrected, must do mischief. It is, therefore, the part of a prudent physician judiciously to distinguish between them, reject the pernicious, make choice of the beneficial, and, laying aside the destructive, to make use of those only which may procure health; in this he will find great assistance from natural philosophy, but more especially from chemistry.

Upon this consideration, and from an earnest of making every thing in physic
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viceable to mankind, we shall consider the medicinal virtues of milk, and demonstrate, that its more fluid substance called Whey, is a sovereign and unparalleled remedy, whilst the more gross, heavy and terrestrial part, particularly when separated from the whey, is always pernicious, both in food and medicine.

Though nothing is more wholesome or better accommodated to the nourishment of animal and even human bodies, insomuch that it may be justly styled the most considerable of aliments, yet, among the variety of sustenances we take, nothing is so dangerous, nothing occasions so many violent disorders, as milk; for as every kind of milk consists of two substances, the one fluid, the other solid, and since without an intimate union and conjunction of these, it is neither salutary nor yields a proper nourishment, so, without doubt, when the
caseous

caseous substance is condensed into a curd, it assumes a different quality, and proves unfriendly to health. We seldom, however, find any aliment which admits of so easy a dissolution of its mixture, and in which the component parts of the mixture are so soon separated from each other; and this so intirely, that the crasis is not only easily destroyed, by an effusion of some particular liquids, but the caseous part even recedes and coagulates spontaneously.

Every one knows, that all milk, when left at rest in summer, as also in winter, if the room is warm, much more if it thunders and lightens, will curdle of itself very easily and soon, the caseous and buttery substance departing from the serous and adhering separately to the vessel. It is also known that milk coagulates by effusion of an acid liquor, or such as has any acidity latent in it, such as vinegar, for instance,
juice

juice of citron, rhenish wine, or malt liquor, and this happens sooner if the milk be warm; yet it is surprizing that a strong and concentrated acid, such as oil of vitriol, is so far from condensing milk, that it renders it more fluid; perhaps for this reason, that the ætherial principle, mixed with oil of vitriol, so attenuates and agitates the parts, adapted to coagulation, as to prevent their curdling and concreting. It is remarkable, that weak spirit of wine, when poured into milk, produces scarcely any alteration; but, when the same spirit, highly rectified, is added to it, especially in a great quantity, it converts it into curd; which, in my opinion, may be thus accounted for: this pure spirit of wine, absorbing the humid part of the milk, causes a succession of the grosser substance from the pores of the more liquid part, in the same manner as it turns saturated spirit of sal ammoniac into a curd.

These

These things produce a coagulation of milk when out of the human body: now let us consider what principally destroys the union of the serous and caseous parts within ourselves. The stomach is seldom without an acid, because most of our food, both solid and fluid, contains an acidity which remains, especially after the digestion of the aliments; and, having nothing to check it, adheres firmly to the coats of the stomach; but as this acid differs greatly in its quality and virtues, so, likewise, the coagulation, produced in the milk, differs; for, in some cases, the mixture of the milk is only disturbed, the grosser parts unite moderately and still remain swimming in the more fluid part; but, in other cases, the grosser parts are converted into an hard, firm, and heavy curd, which subsides; and, firmly adhering to the coats of the stomach and intestines, is, with difficulty, dissolved; but

but afterwards, by an association with excrementitious fordes of a worse quality, lays the foundation for dangerous disorders. This consequence, indeed, rarely follows, though the acid of the stomach be considerably strong, unless the stomach itself be weak and infirm; so that the aliment continues too long in its cavity, and unless it is effected with a preternatural heat, which destroys the due commixture of the various parts of the milk.

From what has been said, we may very plainly discover to what constitution and in what disorders, milk, from the coagulation it undergoes in the stomach, is hurtful and destructive; for first we observe, that the most terrible disorders of sucking infants proceed from coagulated milk, particularly if their weak stomachs are overloaded with the grosser milk, by giving them the breast too frequently, so that they cannot
duly

duly digest the contents, which degenerate into a coagulum, that, by continuing there, becomes very acid and corrosive, and the bilious juices being added to it, in the duodenum, it ferments, grows green, and corrodes the most tender and exquisitely-sensible nervous coats of the stomach, by its acute acrimony excites severe pains, with inquietude and anxiety, which are often followed by mortal epileptic convulsions.

Besides milk, especially that which is replete with a large quantity of caseous substance, is very prejudicial to old men, partly because all food soon grows acid in their stomachs, and partly because the milk itself, as well as the curd, remains too long there, through the laxity and excessive languour of the peristaltic motions, whence arise anxious pains of the precordia, gripings, accompanied with a tenesmus and inflation of the belly; the fæces are also discharged
with.

with pain or corrosion, and itching of the intestines; the body is also pained and the appetite lost. But there is hardly any disorder in which the use of milk is so detrimental as that commonly termed the Hypochondriac Affection, in which, from an evident disturbance of the business of concoction and excretion by stool, arising from spasms and a copious increase of flatulences, many acid crudities are generated in the stomach, which, as they soon coagulate and precipitate the milk received there, bring on very alarming symptoms; nor is it by any means expedient to feed those with milk who are recovered from a violent distemper, because the stomach cannot digest this strong nutriment, but retains it too long; so that by stagnation it assumes a destructive quality, and contributes to the production of many diseases.

In

In what diseases Hippocrates prohibits a milk diet, will appear evidently, from Aphor. 64, sect. 5, which runs thus: “ It
 “ is improper to give milk to persons af-
 “ flicted with pains in the head, to such as
 “ are feverish, or labour under an elevation
 “ and rumbling of the præcordia. It is
 “ also improper for those afflicted with
 “ thirst; for such as have bilious stools
 “ in acute fevers; and such as have lost a
 “ great quantity of blood.”

This I take to be the reason why milk is prejudicial in pains of the head. There is, by means of nervous membranes, a great consent between the stomach and head, so that if the head is tormented with exquisite pain, the stomach is likewise affected and not capable of duly concocting, dissolving, and expelling the aliments. Besides, a pain of the head often takes its rise from a
 disorder

disorder of the stomach, especially when the latter does not properly perform the office of concoction, and is overloaded with acid and viscid crudities. In both cases drinking milk is productive of bad consequences, since it continues long on the stomach, and by that means formed into a prejudicial coagulum.

Hippocrates forbids the use of milk in violent fevers; nor is there any difficulty in accounting for this. For first, intense heat is a very great enemy to the homogenous mixture of milk; and we are convinced, by daily experience, that milk is soon condensed into a kind of a cheese by external heat. Farther, in all fevers, the patient is somewhat costive, or labours under a total constipation: whence that grosser excrementitious matter of the milk, which is no ways suited to a conjunction with the vital humours, still remains; and,
being

being added to the cause of the fever, augments it so that the spasmodic strictures are also increased. Hippocrates also thinks milk improper for those subject to bilious stools or cholera; because these disorders derive their origin from a very acid, corrosive juice, mixed with the sulphureous part of the bile, and not accommodated to dissolve the texture of the milk. He disapproves of milk for persons who have lost a great quantity of blood, which, by too much exhausting the heat and spirits, breaks and debilitates the strength and tone of the stomach and intestines, by the assistance of which, the solution of the food, the elaboration of the chyle, and discharge of the fæces are performed; so that, by this means, milk, after being drank, grows acid and thick by its being continued, and terrible stagnation of the necrementitious matter happen in the primæ viæ.

But

But if we are not satisfied with the reasons already given, and would have them corroborated by the testimonies of the most approved physicians, both ancient and modern authors insist upon the bad consequences of coagulated milk. Thus Avicenna, says, “ If milk becomes acid in
 “ the stomach, from hence arises a vertigo,
 “ syncope, and pungent pain in the mouth
 “ of the stomach ; and such an acid milk
 “ is sometimes productive of a mortal
 “ choleric passion.”

And Discorides, lib. ii, cap. 64, judiciously advises bilious and choleric persons to abstain from all milk, on account of the coagulum. Matthiolus Comment. in Hil. adds this as a reason ; “ Milk,” says he,
 “ formed into a coagulum, produces diffi-
 “ culty of breathing, oppresses the stomach,
 “ fills

“fills the head with vapours, and is con-
 “cocted with great difficulty.” Further,
 Belonius, writes thus: “A man labour-
 “ing under a dysentery, after the un-
 “successful use of many medicines, was
 “advised, by his physician, to the use
 “of new cow’s milk; this, coagulating
 “in his stomach, it is hardly credi-
 “dible what terrible symptoms, such as
 “fwoonings, and others of a like nature,
 “were by that means produced.” Another
 author gives an account of one, who,
 by means of coagulated milk, was seized
 with a cold sweat, and breathed with such
 difficulty that he dreaded a suffocation;
 that he was oppressed with a nausea, and
 tossed himself in his bed, with frequent
 deliquiums. The same author, also, af-
 firms, that another patient was, also, by
 means of coagulated milk, thrown into
 a cholera. Amatus Lusitanous, in-
 forms us, “that coagulated milk pro-
 “duced

“duced a heavy weight, with pain about
 “the precordia; and that the patient, when
 “he attempted to vomit, was immediately
 “suffocated.” He likewise, from the au-
 thority of Aëtius, affirms, that very bad
 symptoms have been produced from milk,
 in patients afflicted with a dysentery. More
 instances of this kind are to be met with
 in Dodoneus’s Annot. c. 17, and Forestus,
 lib. xviii, obs. 13. It is certain that the best
 physicians, from the ill consequences pro-
 duced by coagulated milk, have hesitated
 to assert, that the coagulum of milk has a
 poisonous principle in it.

Since, therefore, such imminent dangers
 arise from milk coagulated in the stomach,
 we shall next briefly consider what remedies
 are suited to the cure of disorders of this
 kind. Sennertus, lib. vi, prax. part 8,
 chap. 39, and in Parilip. p. 17, approves
 of emetics, and Dioscorides recommends a

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lixivium;

lixivium; but I am of opinion that alkalies, whether lixivial or earthy, given before the use of milk, best prevents its curdling, by absorbing the peccant acid; and when that is seasonably corrected, the usual symptoms, produced by its coagulation, are also prevented. But if the milk is already condensed and coagulated, and the patient in a bad situation, a pretty large quantity of aqueous diluters, such as infusions of tea, or Paul's betony, are very serviceable for diluting the coagulum, and dissolving and washing away the viscid lentor. And if there is a nausea and disposition to vomit, this is greatly promoted by a sufficient draught of warm tea, especially if it is rendered more stimulating and efficacious, by dissolving one or two grains of emetic tartar in it. It is proper too, if the strength will admit, to procure an evacuation both by stool as well as by vomit, for which purpose two or three ounces of manna in

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an aqueous vehicle, with two grains of tartar, will be sufficient; and those are serviceable both to adults and infants, if the physician prescribes them with judgement, and accommodates their doses to the different ages and degrees of strength in different patients.

But great danger is not only to be dreaded from milk coagulated in the stomach, but also a too frequent use of milk, which has but little of the serous, and much of the gross substance, disposed to coagulation; such as goats', cows', and sheeps' milk, is not equal for all, but detrimental to many; for milk is less nutritive and salutary to patients of a spongy and porous habit, abounding with slender and numerous vessels; and also, in cases where a large quantity of inspissated humours are lodged in the viscera, which consist intirely of blood vessels, such as the liver, spleen,

kidnies and lungs; so that these vessels are full and infarcted with blood. In this case the exhibition of milk is improper, lest, by its thicker parts, these vessels should be still more infarcted and obstructed.

This doctrine is also confirmed by a memorable passage of Galen. “The frequent use,” says he, “of milk, which has little of the serous humidity, and much of the caseous substance in it, is not proper for every body, and especially if the kidnies are subject to generate the stone: it excites obstructions of the liver likewise in those subject to such a misfortune, as those are who have the extremities of the hepatic vessels narrow; and, for this reason, Aetius carefully inculcates his doctrine, that he who would use milk without any disadvantage, should have the ducts of his viscera open, and his veins large.” Besides,
Hip-

Hippocrates, by case in Epid. lib. iii, affirms the use of milk to be noxious in disorders of the liver. "Apollonius," says he, "was
 " a man of large viscera, and had a conti-
 " nual pain about his liver: he then be-
 " came icteric, flatulent, and somewhat
 " pale: he was at first gently indisposed,
 " and at last confined to his bed; but,
 " using a large quantity of crude and
 " boiled preparations, both of sheeps' and
 " goats' milk, and taking, at the same time,
 " but little food, his symptoms became
 " very terrible, his fever was increased, he
 " became costive, and discharged a small
 " quantity of thin urine." Dioscorides is of the same opinion with Hippocrates and prohibits the use of milk to all persons whose spleen and liver are affected, to those labouring under epilepsies, vertigoes, disorders of the nerves, and head-achs.

Nor is there any difficulty in assigning a reason for this; for since the violent and long-continued pains of the head or abdomen generally draw their origin from a suppression and interception of the free progress of the blood and humours through these parts, and since this interception of the circulation is immediately followed by stagnation, obstructions, and infarctions, hence at last arise in the lower belly a cachexy, the yellow and black jaundice, dropsy, and stone in the kidneys; in the head, madness, both of melancholic and furious kind; epilepsies, and pains, attended with a sense of weight in the loins, polypose concretions, a difficult respiration, spitting of blood, and consumptions. It is easy to perceive that the use of milk, especially after it hath stood some time, by means of the grosser substance prone to coagulate, augments the obstruction of the

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the very small canal, and is dangerous, particularly in corpulent patients, and such as have contracted a bad habit of body by too much ease or a too luxurious manner of living.

But the more prejudicial and subject to generate many disorders that gross substance of milk prone to coagulation, is the more serviceable, in its turn, to human nature, or the temperament and vital motion of the fluids and solids, the more salutary and suited to prevent and cure diseases is that humid portion termed Whey. The most ancient and learned physicians long ago discovered its salutary quality in curing diseases, and have recommended it in the strongest terms to posterity; thus Dioscorides, the oldest and best writer on the *Materia Medica*, lib. ii, cap. 64, speaks thus of the excellent virtue of whey: "Whey," says he, "when separated from the
H 4 "grosser

“ groffer part of the milk, is a much more
 “ effectual purge, and is given to those
 “ whose bodies we would render soluble
 “ without the use of acrimonious sub-
 “ stances; as to persons labouring under
 “ melancholy, the leprosy, the elephantiasis,
 “ or eruptions over the whole body.” To
 this Galen adds, “ That whey is either
 “ drank or injected by way of clyster, to
 “ promote stools, on account of its deter-
 “ sive qualities; for it cleanses and deterges
 “ the acrimony from the intestines without
 “ corrosion.” And in another place he
 exactly delineates the salutary qualities of
 whey in these words: “ Simple whey is
 “ particularly proper for tender patients,
 “ whose bellies and intestines only we
 “ should cleanse and purge; and for those
 “ whose intestines are perhaps easily ulcer-
 “ ated by any medicine; those who, in
 “ consequence of a bilious temperament,
 “ are subject to disorders of the abdomen,
 “ or

“ or labour under a tenesmus, and whose
“ reins, bladder, and uterus are subject to
“ exulcerations ; and lean persons, who do
“ not become fleshy by aliments, but yet
“ want purging. To all these whey should
“ be given, without the addition of salt or
“ any other medicine. Whey is also safely
“ exhibited to children, women and old
“ persons, even during the heat of a fever,
“ at which time especially all other medi-
“ cines are suspected. The use of whey is
“ singularly effectual on patients and dis-
“ eases which require extraordinary assist-
“ ance, especially in eruptions of a long
“ continuance, livid spots, and all deprava-
“ tions of the humours tending to the
“ skin, such as the leprosy, and others of a
“ like nature, inveterate and malignant
“ ulcers, achors of the head, weeping eyes,
“ and itch of the eye-lids, blotches of the
“ face, and continued proxysms of fevers,
“ and to those who, in consequence of a

“ bad state of health, are about to fall into
 “ a dropfy.”

Whey is no less beneficial in those diseases which are accompanied with spasmodic motions, and structures of the nervous parts, and prevent the whole œconomy of the vital motions both of the secretory and excretory kind ; among which the principal in our climate is the hypochondriacal disorder in women, termed hysterical, which is not only very frequent in our days, but also very obstinate, by reason of the preposterous method commonly used in curing it.

¶ This disorder affects the nervous and membranous canal of the stomach and intestines by continual spasms and flatulencies, by which the whole system is drawn into consent, so that it is agitated by the same commotions unequal, as they are conveyed

veyed with violence from the external to the internal parts, and especially to the head and breast, and there excite very terrible symptoms. But the principal cause of this obstinate disorder is to be sought for in the extreme weakness of the nervous system, brought on partly by hereditary disposition, and partly by those things which impair strength, and are unfriendly to the texture and motion of the nervous parts. If to these is added a large quantity of thick blood, either for want of motion and exercise of the body, or from an irregular diet, this blood, stagnating in the intricate windings of the intestines from an obstruction of a free passage through the liver, greatly augments and increases the flatulencies and spasms. And what is still more, as this disorder gets firm possession of the viscera, situated in the region of the hypocondria, and affects the whole system of the nervous parts, it spreads its mis-

chief wider, and hinders other parts of the body; so that the head is principally affected by it, and vertigoes, epilepsies, palsies, melancholy, and madness are produced; but by the spasms affecting the internal parts of the body, the wholesome business of natural excretion is wonderfully disturbed and prevented; by which, not only the discharge of the blood by the veins of the anus and uterus, but also the elimination of the fordes by stool, urine, and perspiration, is either absolutely suppressed, and carried on irregularly, or sometimes offends by excess.

For effectually vanquishing and subduing this dangerous disorder, there is not a more useful, secure and certain remedy than whey.

The celebrated Italian physician Benedictus Salvaticus thoroughly perceived these
extra-

extraordinary properties of whey; who affirms, that he used whey and asses' milk in the most violent and obstinate disorders. Nor will it be improper here to mention in what disorders and what method he made use of it. He, therefore, in melancholic and maniac disorders, recommends whey of goats' milk with syrup of polypody and seeds of apples reduced to an emulsion. And in conf. 6, in melancholic hypocondriac affections, he advises taking two quarts of the same whey for fifteen days. Besides, in conf. 65, he says, goats' whey, very well depurated, and in which leaves of wormwood have been infused, have been prescribed every day for a week; and conf. 73, in hypochondriac melancholy he orders to drop chalybs potabilis with oil of citron into it, and so drink it. Besides, he says, in a palsy of half the body, whey of goats' milk, made more purgative with cream of tartar and rhubarb,

and

and more diuretic with ceterach, white maiden hair, roots of fennel and parsley, adding some drops of spirit of vitriol, is highly beneficial. He cured likewise an epileptic syncope with goats' whey in this manner: he first exhibited the best depurated whey with juice of lemons; but, on the fourth day, rendered it purgative, by infusing one drachm of rhubarb, with a proper quantity of fenna leaves in four ounces of it; after which three pints of whey were to be drank; and on the intermediate days, he ordered one pint of the same whey, having first steeped in it flowers of piony, goats' rue, baum, and citron peel, to be drank. He is lavish in his encomiums on whey in the hysteric passion, cent. 2, conf. 68. and in the morbus niger of Hippocrates, conf. 77, in a vomiting of blood, conf. 82, and in spitting of blood, conf. 34; and 35. The same excellent author says, that he cured a diarrhœa and tenesmus by
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folutive fyrup of rofes and julap of tamarinds, ordering the patient to drink after them fome diftilled goats' whey, He likewife prevented the progrefs of a beginning cancerous tumor in the breaft, by giving three ounces of manna difsolved in goats' whey.

Of all milk, that of women is the beft for the cure of confumptions : but at Naples, and in fome other parts of Italy, and in Germany, the phyficians generally prefcribe, for thofe of their confumptive patients, who cannot have woman's milk, a diet of butter-milk ; and this generally with the beft fuccefs: We have always found by experience, that a draught of fresh churned butter-milk almoft infantly removes an hectic fever ; nay, thofe who cannot take new milk find furprizing benefit from butter-milk. A diet of this and bread alone has cured many confumptions : and thofe fo afflicted need
not

not despair of recovery, if they have resolution enough to persevere in it. If it should at first prove too cold or heavy, let them begin it with very small quantities, and exercise moderately after it; and they will soon find the stomach to be reconciled to it, especially if they take it quite new from the churn. The only inconvenience attending it is, that if it being taken when age has given it an additional acidity, it is apt, in constitutions subject to rheumatic effects, to excite those pains. We have known a consumptive person perfectly cured by riding and this diet: his method was, to put milk in a bottle and carry it in his pocket, and by the motion of his horse it was converted into excellent butter-milk. So that, beyond the Tartars, his riding prepared both his physic and his food.

Every man is nourished by his own milk; and, by the force of the vital principle from
it,

it, prepares all his other solids and fluids; for in men there is always milk as well as in women, though they have never borne children, nor been nurses. In Miscel. Curios. Dec. 2, An. 5, we are told; that milk was drawn from a man of sixty years of age only by suction; and by Miscel. Curios. Dec. 1, An. 3, we are informed that milk was drawn from a woman who was not pregnant; for the chyle which has undergone the action of the heart, lungs, and arteries, and is mixed with all the humours, is separated from them by the surprizing structure of the breasts.

The best of all medicines to relax an over-rigid tone of fibres, is human milk, since it is most adapted to our natures; for which reason it is always to be preferred to the milk of other animals. This milk ought to be furnished by a sound woman, who uses due exercise, observes a laudable regimen,

regimen and is in the flower of her age. It is also best when the breasts are drawn four or five hours after eating; for then the chyle is changed into concocted milk, and, having laid aside the nature of the aliments, begins to assume that of the human fluids; for there is a great difference in milk according to the different times at which it is drawn after the last meal. That which is collected in the breasts immediately after eating or drinking, is crude, and partakes much of the aliments taken; and that which is drawn twelve hours after a meal, is thin, yellowish, and of a somewhat urinous smell, almost like the serum of blood: hence the milk drawn in the middle period between these two times is the best.

We must here also observe, that all animals, which use their mothers milk, draw immediately from the teats, so that it is
never

never exposed to the air, but transfused to the tender animals richly impregnated with all its fine and subtle parts; for highly subtle spirits elaborated by the last concoction in a sound body, seem to be lodged in milk. This is evinced by the large concurrence of nerves in those parts, where the chyle and milk are prepared, by the subtle stream exhaling from warm milk, newly drawn from animals, and by the surprising changes produced on infants by milk. Thus I saw an infant, sucking the breast of a nurse, who was in a furious passion, immediately become convulsive, though before perfectly sound in every respect.

Physicians in all ages have endeavoured to recruit bodies ready to fall a sacrifice to weakness, by having the exhalations arising from a sound young body, lying in the same bed, conveyed into them.

Thus,

Thus, in the first chapter of the first book of Chronicles, we are informed, that the decayed and superannuated body of King David was cherished by laying a healthy young girl in bed with him. When therefore the milk is exhibited after it is become quite cold, or again rendered warm by the fire, it is deprived of that highly-subtle principle which was more necessary than all the rest.

Hence Galen, in the twelfth chapter of his fifth book de Method. Medend. uses these words, “The ancients ordered a nurse
 “to give the breast to those who laboured
 “under consumptions; and I myself approve
 “of the practice. They also ordered, that
 “the patient should use this milk, and that
 “in such a manner, as that it might not be
 “cooled by the circumambient air.” After which, in another chapter of the seventh book,

book, he compares milk to the genital seed, which cannot long preserve its virtues out of proper vessels, but ought either to be retained in the male, or speedily lodged in the female. And certainly, that milk is best which is immediately drawn from the nipples; and afterwards when ridiculing the peevishness of some persons, he adds, as neither they themselves will use this milk, nor allow their children to do so, let them, like asses, use asses' milk.

What has been delivered concerning the virtues of milk is confirmed by a large number of instances. Thus Capivacinus informs us, that he preserved the heir of a noble family, by ordering him to be laid between two wholesome nurses, in the flower of their age, and to suck their breasts. Forestus, in the fourth book of his observations, informs us, that at Bononia a certain youth was seized with a legitimate

gitimate marasmus; but that, by sucking a beautiful young nurse, with whom he also lay in bed, his decayed and exhausted body was so recruited, that they were afraid lest, by an unseasonable venery, he should lose the strength he had acquired by the use of the milk.

The defect of human milk may be supplied by that of asses, which is succeeded by that of mares; to which, for virtues, sheeps' milk is the next; and after that goats' milk, which is much thicker in its consistence, and it may be supplied by that of cows'.

Again, milk varies according to the food with which the animal is nourished, inso-much that a cow, properly fed, will give a more balsamic and salutiferous milk, than an ass that is fed on grains, and those about towns in England (particularly London)

too commonly are. The best food for cattle, whose milk is intended as a medicine, is such as they acquire by perpetual exercise: wild barren lands, where many balsamic and aromatic vegetables abound, as upon uncultivated heaths and commons; for by exercise the wholesome food so acquired is elaborated to a fluid of the most exquisite virtues; but the milk of stall-fed, fat, and lazy cattle, is generally heavy, gross, and phlegmatic, which renders it unfit for to be recommended in disorders of the human species.

Med. Museum.

S E C T.

SECTION IV.

OF THE APOPLEXY.

THIS disorder is a sudden deprivation of all the senses, and all the sensible motions of the body; excepting that of the heart and lungs.

The patient must be bled in a large proportion in the jugular, or vein of the neck, as soon as possible; but if it so happens that a person cannot be procured who understands the method of bleeding in the neck, he must then bleed in the arm without any delay.

If the afflicted is in imminent danger, heat a hot iron of any kind, and apply it to the back part of the head, commonly
3 called

called the Occiput; and, as soon as possible, give an ounce of Huxham's essence of antimony, mixed with half an ounce of oxymel of squills, as a vomit, and work it off with warm water.

The above being premised, make the cephalic wine and take a gill glass of it two or three times a day, *viz.*

Take of mistletoe of the oak, sliced thin, two ounces; piony root, four ounces; wild valerian root, three ounces; nutmegs, mace, cinnamon and saffron, of each two drachms; rosemary and sage, of each half an ounce; compound spirit of lavender, three ounces; infuse them in four pints of white wine for three or four days, and it is fit for use.

SECTION V.

OF THE PALSY.

THE palsy is a deprivation of motion : the sense of touch remaining entire, may proceed from obstructions, inasmuch that the muscles are divested of their blood and spirits, from external cold, received by lying on the cold earth, and from blows, falls, and the like : a fever coming upon a palsy, is thought a good sign, so also is a looseness or diarrhœa, if the case be recent.

In the beginning of palsies, mustard must be used freely, and all kinds of hot spices, and give twenty grains of powder of ipecacuanha once a week as a vomit ; or an ounce and a half of essence of antimony will do better, if it can be had immediately.

And

And the following palsy drops must be given twice or three times every day in a large glass of cinnamon-water, or valerian-tea.

Take of sal volatile oleosum, six drachms; spirit of lavender compound, four drachms; tincture of castor, two drachms. The dose is fifty or sixty drops twice a day in cinnamon-water or valerian-tea: and let the parts affected be anointed with the following oils:

Take oil of saffrafras, and oil of amber, of each twenty drops; oil of marjoram, oil of rosemary, oil of cloves, and oil of nutmegs, of each fifteen drops, and oil of cinnamon, ten drops; mix them together for use.

SECTION VI.

OF THE EPILEPSY, OR FALLING FITS.

AN epilepsy is caused by repletion; from the blood and spirits flowing unequally and involuntarily through the muscles of the brain; by inanition, when the spirits hurry too fast from the brain, which causes a sudden deprivation of all the senses, wherein the patient falls suddenly down, and is affected with violent convulsive motions.

Children who are delicately brought up are more subject to epileptic fits than those who are carelessly nursed.

This disorder is more common to men than women, and is often very difficult to remove.

After the fit is over, it will be necessary to bleed in the jugular vein, and proceed as in the apoplexy. (See Sect. IV.)

Perpetual blisters, issues, setons, and cephalic sternutatories, have great effect, and generally help to crush the disorder, as does all chalybeate waters, and the following bolus may be taken every evening.

Take musk and factitious cinnabar, of each twelve grains; make it into a bolus with any conserve. This medicine must be persisted in for a long time, otherwise you must not expect it can have the desired effect.

The disorder has been removed in children, by taking two drachms of Spanish soap dissolved in warm milk, to be taken for forty days just before the fit comes on.

SECTION VII.

OF THE HEAD-ACHE.

THE general cause of this disorder is a languid circulation of the blood through the vessels of the head, and is accompanied with a very painful sensation in the muscles, membranes and nerves, or parts of the head.

The seat of the disorder is in the membrane which invests the skull joined to the dura mater, by some fibres which pass through the sutures, and sometimes there is an acute pain on the forehead, which is called *clavus hystericus*: if the pain is only on one side of the head, it is called *hemicrania*; if the pain be slight it is called *cephalagia*; if the whole, *cephalæa*.

If

If the cause of the disorder is within the skull, and is attended with a fever, and want of sleep, it pretends a frenzy. If the pain be violent in women with child, attended with drowsiness, and it be of long continuance, it is accounted very dangerous.

In this disorder bleeding should not be omitted: it may also prove salutary to apply leeches to the temples, and behind the ears, and, in the next place, to give a vomit of twenty grains of ipecacuanha.

If the pain be symptomatical or original, administer as follows:

Take tincture of rhubarb, one table spoonful; manna, half an ounce; dissolve the manna in half a pint of thin gruel and

I 4

mix

mix the tincture with it, and take it early in the morning.

If the disorder requires more powerful remedies to carry it off by stool, make use of the following pills occasionally :

Take succotrine aloes in powder, extract of black hellebore, resin of jalap, mercurius dulcis, and prepared cinnaber, of each half a drachm ; extract of saffron and salt of amber of each fifteen grains ; form it into a mass for pills ; a scruple of which may be taken in the morning fasting, and half the quantity in the evening at bed-time, until the patient's body is unloaded and the thick glutinous humours are dissolved.

On the day these pills are taken, the patient must take nothing but thin broths ; after three days, they must be repeated again.

It will be necessary to apply a perpetual blister to the nape of the neck, about the size of a crown piece.

In some kinds of head-ache it will be necessary to open the frontal vein.

Cataplasms of horse-radish and salt herrings, laid to the soles of the feet, have had surprizing effect.

The famous and learned Hoffman says,
 “ If the head-ache arises from a sudden
 “ orgasm in the blood, proceeding from
 “ heat, exercise, or labour, evacuations of
 “ any kind are not proper; but give cool-
 “ ing draughts, with nitre.”

If you dissolve a drachm of camphire in any cephalic spirit, and snuff a little of it up the nostrils, it will ease the pain.

Or,

Take the juice of ground-ivy and make use of it as above directed.

Or,

Take ætherial spirit, and put a little of it into the palm of your hand, and rub it very well into the part affected : this is similar to the late Ward's secret in curing the head-ache, but a much better medicine for the purpose : his being nothing more than spirit of wine and camphire, allum, and essence of lemon, with the addition of the volatile spirit of sal ammoniac. This was Mr. Ward's great secret that he baffled the public with so long.

SECTION VIII.

OF AN INFLAMMATION OF THE BRAIN, OR
A PHRENITIS.

THIS disorder is commonly the effect of inflammatory or malignant fevers, and is often mortal in the third, fourth, or seventh day.

The disease requires immediate applications; therefore the temporal arteries must be opened as soon as possible, which generally proves efficacious.

Doctor Boerhaave recommends the opening of several veins at once, and drawing a great quantity of blood.

Doctor Hoffman prefers bleeding at the nose, procured by thrusting up a pen, skewer, or any thing sharp.

Doctor Pringle advises six or seven leeches to be immediately applied to the temples.

After plentiful bleedings, it will be proper to administer cathartics, such as the following, *viz.*

Take manna, one ounce; cream of tartar and nitre, of each half a drachm; oil of sweet almonds, half an ounce; mix them together in half a pint of warm whey, and take it fasting: this should be repeated every second day; and the drink should be barley water wherein a little sal prunella has been dissolved.

SECTION IX.

OF A CATARRH.

A Flux of matter from the nose is called *coryza*; if from the lungs, a *pulmonic*, or *pectoral catarrh*; if from the *aspera arteria*, it is called *bronchus*.

This disorder may arise from whatever augments serosity, by rendering the blood and juices too fluid; by obstructing transpiration, or the other natural excretions, particularly that of the urine, and so accumulating too much serum, or by hindering digestion, and thence occasioning a watery chyle, which becoming blood of the same loose texture, its fluid parts run off more easily, especially where the glands are most numerous.

If

If the discharge drops upon the lungs, it is generally dangerous and may cause a consumption; but, if the discharge be by the nostrils, there is little danger, and the cure proves easy: if the matter is seated by the throat and jaws, the cure proves tedious and with some danger.

In order to subdue the disorder, and bring the chyle balsamic and fluid, drink at least four or five half pints of whey every day, barley broth, rice milk, and the like; and, if the patient be short breathed, or plethoric, first bleed and give a vomit of the root of ipecacuanha, and, if necessary, repeat it.

In case the patient is uneasy, and troubled with violent coughing, or great defluxions, provided he be neither hectic nor asthmatic, give him as follows:

Take

Take of Venice treacle, half a drachm; species of diambraea, ten grains; syrup of white poppies, a sufficient quantity to form a bolus.

The above bolus may be given when going to rest, after taking a purge, which should be repeated occasionally: the following may answer:

Take of pil. ruffi. half a drachm, and oil of cinnamon two drops; form it into pills, and take them in the morning early.

A tea made of rosemary, horehound, maiden hair, and the like, will be of the utmost service in the disorder.

Bodily exercise will help to promote the cure.

SECTION X.

OF A GUTTA SERENA.

THIS disorder deprives the patient of his sight, and his eyes remain fair and seemingly unaffected.

The optic nerves are depressed with the blood vessels, and prevent their communication with the brain. In dissecting some bodies it hath been found that the optic nerves have been decayed.

A true gutta serena usually affects both eyes, equally diminishing or quite eclipsing the light.

There is no method of cure to be depended on but a salivation, or a frequent use of the specific drops, which are prepared

pared by a company of gentlemen of the faculty of London, and they are pronounced to be a certain cure for all disorders that arise from obstructions.

Note, the drops are sold in bottles, larger than Norton's, at three shillings each, or fifteen shillings the half dozen, by one capital printer or shopkeeper in most towns in England.

P. S. Be sure and ask for the Company of Physicians and Surgeons Specific Medicine, commonly called Freeman's Specific Antiscorbutic Bitter Drops.

SECTION XI.

OF A FOETID (OR STINKING) BREATH.

THE cause of this disagreeable disorder is occasioned by rotten teeth, the scurvy in the gums, corrupted lungs, or something natural to the constitution.

If the teeth be hollow, care must be taken to have the fordes picked clean out, and the hollow part filled up with olibanum, mastick, tragacanth, lead or gold, which will prevent the fragments of the food from lodging therein, as well as prevent the cold from penetrating the hollow part which is generally the cause of the tooth-ache.

To prevent the filthy smell which sometimes flows from rotten teeth, scorbutic gums, &c. the patient very carefully should

should wash out his mouth after meals with a little white wine made warm, and due regard must be paid to remove the disorder whether scorbutic or carious teeth.

But if a foetid breath is natural to the constitution, there is no certain method yet known to remedy it.

A palliative remedy follows, *viz.*

Take angelica root, flowers of lavender, damask roses, of each two handfuls; saffras, cardamom seeds, the lesser cloves and aloes wood, of each two drachms; mix them together, and boil them in two quarts of strong vinegar and let the steam down your throat through a funnel, two or three times a day.

Musk and all aromatics answer the purpose for the present time.

SECTION XII.

OF DEAFNESS, AND PAINS IN THE EARS.

THE auditory passage of the ear is sometimes wanting or blocked up in children, and very often deafness is hereditary, or proves the consequence of fevers, the French disease, apoplexy, or epilepsy: it may also proceed from taking a cold, a stoppage of evacuations, concussions, or loud noises, as the firing of cannon, &c. by which the tympanum is supposed to be over stretched, broke or otherwise injured. A moist air may also relax the membranes of the ear; wax may be collected in too large a quantity and hardened in them, and so obstruct the passages. Impoſthumations, tumours, ulcers, &c. may also prove the cause of deafness.

The

The first thing to be done towards a cure, is, to examine thoroughly into the cause of the disorder. If it proceed from a rupture of the tympanum, or hereditary, it is incurable. If it has been standing for years and continual, it is seldom cured; but there are hopes of a cure when the patient can hear a little at intervals.

If the meatus auditorius is not perforated, the proper chirurgical operation must be performed. When it attends other diseases, it usually goes off along with them; but if it continues, or succeeds them, purging will sometimes eradicate it. If it remains obstinate, or be the consequence of the apoplexy, or epilepsy, and the tympanum be much injured, mercurials may do service, being internally used.

In

In order to remove the cause, if practicable, it will be proper to begin with simple methods, such as the following :

Take oil of amber, rosemary and margoram, of each one drop; oil of almonds, one drachm; mix them together and instil two or three drops into the ear every night going to bed, and stop them with a little crude hemp picked as fine as possible :

Or,

Syringe the ears with a little peppermint-water two or three times a day, made warm :

Or,

Instill into the ear, every evening, a few drops of the following preparation :

Take oil of almonds, three drachms ; oil of castor, one drachm ; spirit of wine camphorated, and spirit of lavender compound, of each half a drachm ; mix them together for use : this will be of service where the deafness is attended with pain.

If any insect has got into the ear and it cannot be extracted by the forceps, it may be killed by dropping the following mixture warm into it.

Take tincture of myrrh, aloes, and oil of almonds, of each two drachms ; oil of favin and wormwood, of each ten drops ; mix them for use.

When there is an intolerable pain in the ears, use the following mixture :

Take

Take balsam of Peru, and liquid laudanum, of each equal parts and mix them; a little of this is to be dropped into them occasionally.

The above may also be of service in the tooth-ache, if applied upon a little lint, and thrust in the hollow part, and another bit applied to the affected gum.

When deafness arises from a slackness of the auditory nerves, it may be cured with equal quantities of spirit of lavender, and Hungary water, made warm, and dropped into the ear. Some advise the gall of an eel mixed with spirit of wine, and others, the fumes of sulphur.

SECTION XIII.

OF A QUINCY.

THIS disorder is peculiar to the throat, and is inflammatory, œdematous, catarrhus, convulsive, paralytic, suffocative, suppurative, gangrenous, scirrhus, or cancerous, and is often caused by a plethora, a stoppage of the monthly visits, a sudden check of any evacuations, the drinking of cold water or other small liquors, when over hot, &c. &c.

The disorder is generally felt very severe by a burning pain; tumour and redness of the fauces; a difficulty of breathing or swallowing, attended with a fever; a frothing of the mouth, and the tongue much swelled, and, if of a black colour, portend death.

The mouth and throat must be kept moist, and the nose clear, that the air may have a free passage through it: and if the disorder is come to the height, and the patient cannot swallow, he must have clysters of mutton broth administered three or four times every day, or until the tumour breaks or comes to suppuration.

Bleed plentifully in the jugular (or neck) vein, for that yields the best assistance. After the first bleeding, lay a large and strong blister round the fore part of the neck.

As all strong physic is prejudicial, the following will be proper, if the patient can swallow it:

Take of manna, two ounces; stibiated nitre of the Edinburgh Dispensatory, one

drachm and a half; mix it in half a pint of warm whey, and take a little of it every hour.

Emollient fumigations are of the utmost service to allay the inflammation of the throat :

Take camomile flowers, and flowers of St. John's wort, of each one handful, boil them in two quarts of milk, until one third be evaporated, then put a large funnel over the vessel that contains them, and let the steam down your throat ten or a dozen times every day :

Or,

Take strong vinegar, one pint; myrrh, in powder, one ounce; honey, two ounces; boil them well together, and use it with a funnel, as above directed.

Soaking and bathing the feet and legs in warm water may be of service.

If the disorder should be so very inveterate as to endanger the patient's life, it will be necessary to send for a surgeon, one well skilled in his profession, to open the *aspera arteria*, an inch or two under the *pomum adami*, or body of the larynx, cutting between two of its rings, and putting a silver canula into the aperture, that the patient may then gather air and breathe through it, instead of the glottis. This operation is called *bronchotomy*.

If the tumour in the throat comes to suppuration, and the surgeon can reach it safely with a sharp instrument, it should be opened, for the least quantity of matter being discharged will be a means of saving life.

Black jelly of currants is of service, also a decoction of their leaves, or bark boiled in milk, used as a gargle (when the jelly cannot be had), will cure the inflammation.

In a malignant quincy (or putrid fore throat) the only remedy that I am acquainted with for the cure of the disorder is, to administer a scruple of the confectio cardiaca every hour, for two or three days, and apply the fumigation of vinegar, myrrh, honey, &c.

SECTION XIV.

OF AN ASTHMA, AND DIFFICULTY OF
BREATHING.

THIS disorder is caused from whatever hinders the motion of the lungs, violent exercise, sudden fear, or being surpris'd at any thing; ill digestion, cachexes, or whatever affords viscid chyle, and hinders concoction; the stoppage of the menses, hæmorrhoids, and many other reasons may be given for the rise of the disorder.

All thin spoon-meats should be made use of in asthmas; boiled meats are preferred to roast; cheese, and all kinds of aliment that are hard of digestion, must not be ventured upon.

If

If this disorder takes its rise from healing up foul ulcers, or by repelling the gouty matter, or from a stoppage of the monthly visits, hæmorrhoids, and the like, care must be taken that the patient be immediately supplied with diaphoretics, to return the matter back to the superficies of the body again, of which two or three grains of Doctor James's powders will answer the purpose as well and as certain as any medicine, to be administered every other hour, drinking at the same time warm saffrafras tea to promote its operation: when the patient begins to be in a breathing sweat, he need take no more of the powders. But this should be done two or more days following.

The patient may take four grains the following evening when going into bed, and add one grain every night until he

K 4

takes.

takes eight grains, to which he may continue till he finds himself relieved, or in a fair way of recovery : he must keep himself from taking cold, and, for common drink, a tea made of horehound, colt's foot and maiden-hair, may be taken warm and sweetened with any thing.

Doctor Simfon, in the Medical Essays, prescribes ten grains of mercurius dulcis, to be repeated at the distance of a few days, purging it off the next day. This, he says, has had admirable success in the cure of asthmas.

In the convulsive asthma, Doctor Dover recommends as follows, *viz.*

An ounce of quicksilver is to be given every day at what time the patient pleases to take it, and a table spoonful of the gas of sulphur, in a large draught of spring-water,

water, at five in the afternoon, and again at bed-time.

This method, he says, he never knew to fail in the cure of any person.

A tea made of hyssop, veronica, ground-ivy, and daisy flowers, cannot be too much recommended. But all sweet things must be avoided in every kind of asthma.

In the moist, or pituitous asthma, from fifty to a hundred drops of the following paregoric may be taken in a glass of mountain, at night when going into bed, *viz.*

Take flowers of Benjamin and strained opium, of each one drachm; camphire, two scruples; oil of anniseed, half a drachm; spirits of wine, one quart; mix them for use.

SECTION XV.

OF A CONSUMPTION.

THE cause of a consumption may proceed from the straitness of the thorax, which if so it is called *natural*. But there are many other reasons to be given for consumptions, such as ulcers, chalky stones, or polypusses in the lungs, which proceed from an obstruction of the pulmonary vessels, or render the blood viscid.

The suppression of the menses, lochia, hæmorrhoids, issues, or old ulcers, may also cause an atrophy, so may perineumonies, plurisies, asthmas, long-continued coughs, and catarrhs, dropping from the head on the lungs, ill digestion, diarrhœas, and obstructions of the lacteal vessels, excessive venery, hard study and grief.

The

The first symptoms are, flying pains and stitches, a heavy pain at the pit of the stomach, frequent spitting and loss of appetite, faintness, night sweats, asthmas, coughs, &c.

At last the disorder causes an ulcer of the lungs, which wastes away the whole habit of the body, and the patient dies with the complaint.

It invades persons from eighteen to thirty-five years of age; blood is sometimes coughed up from the lungs without any pain, and, if any vessel is broken, it flows out in a rapid manner, but, in a little time afterwards, it abates.

First, If the patient be plethoric and accustomed to bleeding, take away about ten ounces of blood from the arm, and

K 6 immediately

immediately remove him into a fresh change of air, and, for common drink, let it be an infusion of ground-ivy, the lesser centaury, camomile flowers, water trefoil, and the like bitter herbs, which will promote digestion, and strengthen the stomach and quench thirst.

If the disorder is attended with a cough, make the following syrup, and take a large table spoonful of it whenever it is troublesome :

Take equal parts of lemon juice and sugar-candy, and put them into a pipkin and let them simmer over a fire, until they are well mixed. This will be of much more service than oily medicines, as they serve only to deprave the appetite rather than to procure one.

A fre-

A frequent use of butter-milk, to make it a daily food, will be of infinite service, and a number of consumptive people have been relieved by persevering in it as a constant diet.

Also, the frequent use of new milk; wherein horehound and maiden-hair has been boiled, and drank to the quantity of two quarts a day, with proper exercise on horseback, has cured a number of people, especially if it agrees with them, and is not too heavy for their stomachs. But the milk of a woman, if it was possible that a patient could have a sufficiency, may be depended on as an absolute cure. Instead of which, asses milk may be taken as a substitute, as that is the next in efficacy.

Nervous consumptions may be relieved by a frequent use of the Peruvian bark,
chaly-

chalybeate wines, chalybeate waters, long journeys on horseback, agreeable amusements, and chearful company. Nourishing diet, and generous cordials, should be taken, and, above all, I recommend the patient to be good-humoured, and not to be fretful on any account whatever.

SECTION XVI.

OF SIMPLE AND COMPOUND FEVERS.

THE continuance of the increased velocity in the blood's circulation beyond what is natural to the constitution, is a simple continued fever.

An inflammatory fever occasions great pain, especially in the face, which sometimes tends to a mortification, and gives a suspicion that it is malignant.

A malignant fever is accompanied with livid or other spots, on several parts of the body, and the texture of the blood is spoiled or destroyed.

A fever, attended with large evacuations of any kind, is called a *colliquative fever*.

Whether

Whether fevers are simple or compound, bleeding is necessary in the beginning, unless old age or great weakness contra-indicate; but this operation should not be performed after the fifth day, lest it should prolong the crisis. After phlebotomy, give the patient a common vomit of ipecacuanha.

But after my recommending bleeding and vomiting, in justice to Doctor James's medicine, I cannot recommend any thing better, in all kinds of fevers, than his fever-powders; they are safe and efficacious, if administered by a skilful hand.

Doctor Huxham's essence of antimony may be given to great advantage, if a physical gentleman orders the doses according to the nature of the fever.

The

The essence of antimony may be given as a diaphoretic, in the quantity of three tea-spoonsful, in robust constitutions, in a little gruel or other liquid, and may be repeated in twelve hours after ; this quantity is proposed when the patient is in the utmost danger.

But the best method to give it is, to administer twenty drops every hour, in any liquor, till there is a change for the best ; this may be done with the greatest safety, it being a medicine that has little or no heating quality in it.

SECTION XVII.

OF THE NATURAL SMALL-POX.

A Minute description of this contagious malady is unnecessary: I shall therefore only deliver a few remarks and necessary instructions throughout the disease.

The cause of this disorder is known to be by infection, which has never yet been totally removed from this kingdom. Children, by over-running, or other exercises, whereby they may be over-heated, are generally seized with the small-pox sooner than if they restrain from such practices. Grown people, that debauch their constitutions, are also more liable to fall into the disease than those who live in a regular manner.

At the first appearance of the small-pox, people in general are much alarmed, and often make use of medicines which generally endanger the patient's life; for the use of bleeding, blistering, and purging, with an intent to appease the strength of the disease, only serve to disturb nature in her operation, and exhausts the strength of the afflicted, which is very often the cause of the patient's falling a victim to the disease.

When the patient is first afflicted, he should be encouraged to keep from lying in bed as long as ever he can support himself out of it; he should refrain from taking the old women's nostrums of saffron and marygold tea, wine, punch, brandy, and all other hot cordials; these are particularly recommended by the nurses as proper things to throw out the pock from the heart; but this old, worn-out practice
ought

ought to be abolished, since we are well convinced, at this time, that such practices have been attended with very disagreeable consequences to the unhappy patient: in short, one half of those who have died in the disorder, have been nursed to death.

My reason for expunging the use of hot medicines, is, because they heat and inflame the blood, which increase the fever, instead of lowering it. Therefore the proper and safest method in the disease is to administer to the patient plentiful of diluting liquors, such as balm-tea, barley-water, clear whey, gruels, &c. his food should be very light, and his legs and feet be very often bathed in warm water.

If the spittle, through heat, is so tough that it cannot be hawked up, inject a gargle into the throat with a syringe. The following will answer the purpose:

Take

Take of oxymel of squills, and honey of roses, of each two ounces; elm bark, five or six drachms; liquorice-root, half an ounce; red roses, one handful; boil them in a pint and half of water, and it is fit for use; this is to be made use of occasionally.

It sometimes happens, though not often, that the variolous fever is accompanied with a single or double tertian; in which case the Peruvian bark, or its extract, may be exhibited at proper distances of time, till the fits cease to return. But, before the bark is administered, the body must be opened with a clyster.

When the petechiæ, or purple, black, or livid spots appear among the pustules, the Peruvian bark must be given immediately in large doses. A child may take the bark in syrup of oranges and cinnamon-water;

two drachms of the bark to be mixed in one ounce of common water, and two ounces of the syrup of oranges, of which the child must take a table-spoonful every hour. Grown people must mix a triple quantity of the bark syrup and cinnamon-water, and take four table-spoonsful every hour; this medicine must be persevered in and taken as here directed, which will produce very salutary effects; but, on the contrary, if it is not complied with, the patient may lose his life.

When the pock strike in before they are come to maturity, or, in other words, if the eruptions subside suddenly, the danger is great. Therefore, in order to assist nature, blistering plaisters must be immediately applied to the wrists and ancles, and the patient's spirits must then be supported with proper cordials.

After

After the person has got over the disease, it will be necessary that he takes three or four purges. For young children, an infusion of senna and prunes, with rhubarb, sweetened with coarse sugar, and given a tea-spoonful at a time, till it operates. Old people must take something of a stronger nature. The purging should be used at the space of three or four days distance. When boils, or other eruptions, are the consequence after the disease, take a few bottles of the specific antiscorbutic drops, sold in most towns in the kingdom, at three shillings each bottle, larger than Norton's, which are sold at six shillings each.

SECTION XVIII.

OF VOMITING.

THIS is a convulsive motion of the stomach, which discharges its contents at the mouth, instead of descending through the pylorus.

This disorder may be caused by a too great quantity of the aliment in the stomach, also from particular medicines or poisons; from an abscess in the coats of the stomach, or such as have been hard drinkers. The nerves of the stomach may be affected, as often happens in consumptive, hectic, paralytic and cachectical constitutions.

Bleeding and vomiting is the first thing to be done in this disorder, if the patient can bear it. After the operation give the following bolus :

Take

Take mithridate, one scruple ; species of diambraea and saffron, of each five grains ; oil of cinnamon and mint, of each one drop ; London laudanum two drops ; with a sufficient quantity of syrup of mint form a bolus. A few drops of compound spirit of lavender in a glass of wine will be of great service in the disorder.

And the following draught may be given with good success :

Take lemon juice, two ounces ; salt of wormwood, one drachm ; white sugar one ounce ; mix them, and take it every morning, and repeat it again in the evening.

SECTION XIX.

THE HEART-BURN.

THE heart-burn is a painful sensation of heat or acrimony, at particular times, about the right orifice of the stomach.

The disorder proceeds from the acrimony or acidity of the fluids, or contents of the stomach, occasioning a small excoriation.

Stale liquors, vinegars, spices, &c. may also be the cause. Some constitutions are more subject to the complaint than others, and it is most common to the sanguine and bilious.

The cure of a common heart-burn, from indigestion and the acrimony of the contents

tents of the stomach, which chiefly happens in a morning with wind, may be performed by drinking a few dishes of tea or coffee, or a decoction of camomile flowers; or the tabellæ cardialgia, or lozenges for the heart-burn may be carried in the pocket, and taken at pleasure; about a drachm is sufficient for a dose. The method to make them follows :

Take of powdered oyster-shells prepared, four ounces; chalk, two ounces; crabs' eyes and crabs' claws prepared, of each one ounce and half; white sugar, four ounces; bole ammoniac and japon earth, of each two drachms; oil of cinnamon, fifteen drops; mucilage of gum tragacanth a sufficient quantity to form it into lozenges.

But if worms be the cause of the heart-burn, as very often they are, a draught of

warm milk, with an ounce of the oil of almonds in it, may cause them to be thrown up.

SECTION XX.

THE HICCUP.

THIS disorder is commonly called Hiccup, Hiccough, or Singutus. It is a spasmodic affection of the stomach and diaphragm, arising from whatever irritates and vellicates their nervous coats.

Sometimes it is occasioned by drinking or eating too much; and, at other times, by eating any thing which is too dry; at others again, by the want of proper nourishment, the drinking of cold water, or the attack of a malignant fever, and may be either original or symptomatical.

The best remedy to cure the disorder is, to mix a scruple of musk in a sufficient quantity of conserve of red roses, and give it occasionally.

L 3

Or,

Or,

The ætherial spirit may be taken in a glass of wine, to the quantity of a tea-spoonful; that has been found to relieve it.

SEC-

SECTION XXI.

OF THE PALPITATION OF THE HEART.

THE cause of the palpitation of the heart, is through an immoderate and irregular motion of the blood therein; which obstructs the proper systole and diastole.

If it proceeds from a tumor, or callosity, a polypus, &c. it augments gradually, and generally proves mortal. When an asthma attends the palpitation of the heart, blisters must be immediately applied. When passion is the cause, bleed, blister, and give an opiate.

In women it is very often caused through grief, sudden fear, and hysterical disorders.

Mineral waters of the steel kind are very useful to remove the complaint; so is the tea of balm, veronica, primroses, or citrons; also spirit of lavender, tincture of amber, an equal quantity of each mixed together, and about forty drops of it taken in valerian tea, twice a day.

SECTION XXII.

OF THE BITE OF A VIPER.

THE symptoms which follow the bite of a viper, are, an acute pricking pain in the wounded part ; a tumour which is first red, then livid, and spreads itself to the neighbouring parts : sickness at the stomach follows, bilious vomitings, with convulsive fits, attended with cold sweats, &c. When the symptoms abate the wound grows worse, and the whole skin appears of a yellow colour.

The first thing to be done towards the cure, is to take about twelve ounces of blood from the arm, and to administer the following draught :

Take of cinnamon and treacle-water, of each one ounce and half ; syrup of oranges
 L 5 and

and saffron, of each three drachms; spirit of sweet nitre, one drachm; mix it together for a draught. This should be given every night at bed-time, to promote a diaphoresis, which it will do without inflaming the blood.

The external application has generally been the fat of a viper; but common fallad-oil, well rubbed into the part affected, with a warm hand, has been found equally as salutary.

The cure for the bite of a rattle-snake follows:

Take of the roots of plantane and horehound, a sufficient quantity, bruise them in a mortar, and squeeze out the juice, of which give a table spoonful as soon as possible; if the patient be swelled, force it down his throat: one dose generally cures;

cures; but, in case it should give no relief, repeat it an hour after, which never fails. Query, whether the same method will not cure the bite of the viper?

SECTION XXIII.

OF THE BITE OF A MAD DOG.

THE infected saliva of the dog being infused into the blood are the consequence of the following symptoms, *viz.*

About the wounded part are excruciating pains, accompanied with flying pains all over the body; sadness, irascibility, an intermitting pulse, tremors, and contractions of the nerves, inward heat and thirst, and at last an hydrophobia, and convulsions at the sight of all kinds of liquids.

Animals of all denominations may be thus afflicted with the bite of a mad dog, and there is scarce any poison which produces such terrible effects, and causes such a wonderful change upon the body of those affected.

The

The many other symptoms are almost innumerable, and shocking to relate. I shall, therefore, proceed, and deliver the most certain methods of cure for the complaint.

The cure must be first attempted by taking away a large quantity of blood, to lower the inflammation, and the following medicine should be administered as soon as possible.

Take cinnabar factiti and native cinnabar, of each twenty-five grains; musk, one scruple; mix this in a tea-cup-ful of French brandy, for one dose. If the patient has any symptoms of the disease, it should be repeated again three hours after; but I have known it given with the best success every morning for four days. It must be remembered to apply a plaister of galbanum,

num, with half an ounce of pure opium, all round the throat.

Doctor James orders a vomit of turpeth mineral, from two to eight grains, not omitting the cinnabarine powder, as before ordered.

During the use of these medicines, a drachm of the strong blue mercurial ointment should be well rubbed into the place bitten, once every day, for the two first days; then the second day following repeat it again.

Children, being of a weaker constitution than adults, must have the quantity of ointment made use of according to their age; during which time, keep their body open by administering a sufficient quantity of syrup of rhubarb.

At the full and change of the moon, the patient may be blooded, and take a vomit of the turpeth mineral, by way of preventative. Or he may take one grain of it made into a bolus, every other day, until he is secured from the disorder; if it makes his mouth sore, it must be rinsed out with a little sweet oil, wherein camphire has been dissolved; but if that do not carry off the soreness of the mouth and gums, recourse must be had to a purge or two. Then begin with the pill again; but, above every thing here proposed, a salivation is the most certain in its effects, and that should be set about immediately the patient has received the infection.

The proper method to raise the salivation, will be to do it by friction, and to help it by the internal use of turpeth mineral.

SECTION XXIV.

OF THE JAUNDICE.

THIS disorder makes its appearance in the following manner : The white of the eyes appear yellow, afterwards the face, and every other part of the body puts on a very deep saffron hue also. The urine that comes from the patient is also of the same colour, and will stain linen.

The disorder is seldom mortal, unless the liver or bile-vessels be scirrhus ; but when from the bite of a viper it is dangerous.

A jaundice, arising from violent transports of anger, or the spasmodic stricture of the intestines, or biliary ducts, caused by a drastic purge or emetic, is easily cured, if taken in time ; but, if encouraged by
 4 grief,

grief, or the body is weakened by a previous disorder, the cure is more difficult.

Vomits of any kind are good in this disorder, and soon give great relief, if the disease do not proceed from a spasmodic cholic, or a stone lodged in the cystic duct, exciting a violent uneasiness about the præcordia. Doctor Hoffman orders a scruple of ipecacuanha, with one grain of emetic tartar, in a draught of generous wine, drinking warm gruel after it, which is allowed to be a very proper vomit.

After the vomit it will be proper to take half a drachm of the following electuary twice a day:

Take Spanish soap, three ounces; rhubarb in powder and hierc picra, of each half an ounce; syrup of orange peel, a sufficient quantity to make an electuary.

Doctor

Doct^r Huxham says the sal diureticus* is the greatest dissolvent, and the most powerful remedy in this disease.

It dissolves the most tenacious substances, and opens the obstructions of the viscera, and yet has no acrimony, and may be safely given in the pleurisy and dropsy: its doses are from a scruple to half a drachm.

Some people have been cured of the jaundice by taking the white of a new-laid egg in a gill of mint-water every morning, for three times following, then stop three mornings, and repeat it again. To be taken till the disorder disappears. Pump-water will do, if the mint-water cannot be had.

* Sal. diuretic. the dose is from half a drachm to a drachm.

Or,

Or,

Take four ounces of hemp-feed, and boil it in two quarts of milk or ale, till the feeds break, and drink half a pint of it twice a day; a gallon of this liquor, taken as here directed, seldom fails to perfect a cure, after every other has been tried, without effect. If it purges too much, only take it in the morning.

Or,

Take of lesser cardamum seeds powdered, half an ounce; gum ammoniac and fresh squills, of each half an ounce. With a sufficient quantity of balsam capiva, make them into a mass and form them into pills. The dose is one scruple twice every day.

SECTION XXV.

OF THE CHOLIC.

WHEN the patient is afflicted with a bilious cholic, he vomits a green or white pituitous and frothy fluid, with great heat and griping pain.

The flatulent cholic is a fixed pain in the right and left hypochondrium, or beneath the stomach, which signs prognosticate that there is wind or excrements pent up in the flexures of the colon.

After which there are cardialgic passions, and an ineffectual retching to vomit.

Cure

Cure in the Bilious Cholic.

Take away twelve ounces of blood from the arm, and give the following saline draught :

Take of salt of tartar, one scruple ; lemon juice, half an ounce ; white sugar, one drachm ; mix for use. To this add fifteen drops of liquid laudanum, and give it the patient according to the urgency of the symptoms.

Spread a small plaister of Venice treacle, and apply to the stomach.

Clear whey or thin gruel, acidulated with lemon juice, or cream of tartar, should be drank freely.

In case what is here prescribed fails to give relief very soon, the patient must get into
warm

warm water up to his shoulders, and there bath about two minutes, and have particular care that he do not take cold after it.

The Cure of the Flatulent Cholic.

Take of fenna, two pounds; jalap in powder and carraway seeds, of each half a pound; liquorice juice, sliced thin, eight ounces; infuse it all together in two gallons and a half of proof spirit, for six days, shaking the bottle now and then, and pour off what is fine for use; two or three table spoonsful is a dose, to be taken occasionally.

This cordial will break the wind, and open the obstructions, and cause a stool or two extraordinary.

SECTION XXVI.

OF WORMS.

THERE are different species of those animals; and are apt to lie in the intestine tube: the teretes or rotundi commonly seat themselves in the stomach, or intestine tenuia; the ascarides in the intestina crassa, and often near the sphincter ani; the latifaciæ, or tape worms, lie any where in the passage indifferently.

The symptoms of worms are numerous, a few of which I shall here describe. The true symptoms are sometimes a pale face, and, at other times, a flushing red countenance; itching of the nose; starting and grinding their teeth when asleep; swelling of their upper lip, and very often a bad appetite; at other times quite voracious; a
looseness,

loofeness, and a sour, stinking breath; a swelled belly, and frothy white urine; frequent pains in the side, with a dry, husky cough; swoonings, cold sweats, palsy, epileptic fits, unequal pulse, palpitation of the heart, &c. In the excrements there are small bodies, like unto cucumber seeds; then, when they appear in that manner, it is a sign the patient is afflicted with the tape-worm.

The medicines for all kinds of worms are as follow: Take of prepared tin, two ounces; mix it in six ounces of treacle, and take a tea-spoonful of it four or five times every day until it is all used:

Or,

Take of prepared tin, two ounces; conserve of wormwood, one ounce; make them into an electuary with a sufficient quantity of simple syrup. The dose is one ounce of this electuary every morning.

Once

Once or twice a week, it will be necessary to take the following purge: Take jalap in powder, half a drachm; mercurius dulcis, six grains, mix it in a little honey or treacle and take it early in the morning, and work it off with warm gruel.

Children will be treated off hereafter in a Section by themselves.

SECTION XXVII.

OF THE SCURVY, GOUT, RHEUMATISM,
 ULCERATED LEGS, KING'S EVIL, LE-
 PROSY, SCURF-HEAD, INFLAMMATION IN
 THE EYES, &c. &c.

THE scurvy is known by a spontane-
 ous weariness; heaviness in the body;
 difficulty of breathing, especially after
 bodily motion; rottenness of the gums; a
 stinking breath; frequent bleeding of the
 nose; difficulty of walking; sometimes a
 swelling, sometimes a falling away of the
 legs, in which there are always livid, plum-
 beous, yellow, or violet coloured spots;
 and the colour of the face is generally
 tawny. In the next place, obstinate ulcers
 arise, of the very worst kind, which no ap-
 plication will cure, and very often turn to a
 gangrene: they break out in all parts of
 the

the body, but especially the legs, and stink intolerably.

There are dry scabs with a dry and mild leprosy, gnawing pains, quickly shifting from place to place, which grow more violent in the night. In short, the scurvy in the blood may cause the leprosy, king's evil, gout, rheumatism, scurf-heads, fore legs, inflammations in the eyes, and a number of other dangerous disorders, both internal and external.

All those disorders are become general to the inhabitants of England, and there are medicines advertised daily for the cure, but being so very extravagant, all classes of people cannot afford to purchase them.

Regular Cure for the Scurvy.

There is no method known for the cure of the scurvy but pursuing a course diametrically opposite to that which brings it on. It proceeds from a vitiated state in the blood which is occasioned by errors in diet, air, exercise, &c. In this disorder the air should be pure, the diet light, and easy of digestion; broths made of fresh meat, wherein are boiled plenty of vegetables, such as leeks, onions, cabbage, and other herbs, should be made use of. Sallads of every kind are proper, but particularly dandelion, sorrel, endive, lettuce, fumitory, purslane, scurvy-grass, cresses, &c.

An ale made of wormwood, horseradish, mustard-seed and senna is recommended.

Van Swieten says, " he has often seen
 " families effectually cured of the scurvy
 " in Holland by the use of a cask of ale, in
 " which were put heads of red cabbages
 " cut small, twelve handfuls of cresses, or
 " scurvy-grass, and a pound of fresh horse-
 " radish, previously infused."

A milk diet, and whey are beneficial in
 the scurvy, or whey alone impregnated
 with the juice of four oranges or lemons.
 All the patient's food and drink should be
 sharpened with cream of tartar, elixir of
 vitriol, vinegar, or spirit of sea salt.

Infusions of the bitter herbs, such as
 ground-ivy, the lesser centaury, marsh tre-
 foil, &c. is also recommended in foul scor-
 butic eruptions.

A decoction of the roots of water-dock is also ordered by the faculty, and a number of others of the like nature. Sweet wort, drank in the quantity of a pint twice every day, is reckoned a specific in the sea survy.

The afflicted will be pleased to observe the regular method, and make a fair trial of it. After which, if it fails, they may make use of the Specific Drops, which may be depended on to be a soveraign remedy in any of those disorders, after every other medicine have proved abortive.

They are prepared by the author of this book, and sold in square bottles of three shillings each, by Pearson and Rollason, booksellers, at Birmingham; Mr. J. Crouse, printer, at Norwich; Mr. Cocking, printer, at Bristol; Mr. Blanchard, at York; and by one shopkeeper in most towns in the kingdom, with directions how to take them.

S E C-

SECTION XXVIII.

OF INTERMITTING FEVERS AND AGUES.

WHEN the patient is afflicted with an ague, he is seized with a cold, shivering fit, which being soon succeeded with heat, it goes off in a diaphoresis.

Whatever relaxes the solids, diminishes the perspiration, or obstructs the circulation in the capillary or small vessels, disposes the body to agues.

The diagnostics are, heaviness; dulness; drowsiness; retching and vomiting; a small slow pulse; coldness and shivering, beginning in the joints, and thence creeping all over the body; pain in the head and loins; weariness of the limbs; coldness of the extremities; stretching; yawning, &c.

Before the patient can expect to be relieved of this disorder, he should take a vomit of Huxham's essence of antimony which can be had at any apothecary's; this being premised, he may then venture on taking other medicines for the cure. Those who cannot comply with taking a vomit, may take a purge of jalap or rhubarb. Either the vomit should be taken two or three hours before the fit comes on, or the purge should be taken the day before it returns: the following mixture may be of service in eradicating the complaint:

Take a quart of good old brandy, and put into it two ounces of the best Peruvian bark in powder, to which add of snake-root, half an ounce, and winter's bark, three drachms; infuse them a day or two and it is fit for use.

An

An hour before the fit returns, take a large wine glass of the above tincture, and an hour after the fit is over, repeat it again; six hours after, take another glass; so continue to take it every day three or four times when the fever is off.

Or,

If a decoction be more agreeable, an ounce of Jesuit's bark, and two drachms of snake-root bruised, with a drachm of salt of wormwood, may be boiled in a proper quantity of water; to the strained liquor, may be added an equal quantity of red wine, and a glass of it taken four or five times a day, or oftener.

Or,

Take alum, nutmeg, and extract of Peruvian bark, of each fifteen grains, and, with a sufficient quantity

M 5 of

of syrup of cloves, make it into a bolus and take it six mornings fasting.

Or,

Take flowers of camomile in powder, one drachm; spirit of sulphur, a tea-spoonful; and syrup of cloves a sufficient quantity to make it into a paste; take one half of it just before the fit comes on, and the other part some time after when the fever is off, so continue it till the ague disappears.

Or,

Take ginger and fennel seeds, of each half an ounce; carraway seeds and lesser cardamoms, of each one drachm; let them be all in powder, put them into a pint of red wine, and add to it half a pint of geneva, warm it, and take three large spoonsful before the fit comes on, which must be repeated three times, or oftener.

SECTION XXIX.

OF THE GRAVEL AND STONE.

PERSONS who have been much afflicted with the gout or rheumatism, at the decline of life are generally afflicted with the gravel or stone.

The symptoms are, frequently a nausea and vomiting, with a numbness down the leg and thigh of the part affected; a pain fixed or moveable, great or less, in proportion to the bulk of the impacted matter, felt generally about the region of the loins, os pubis, and parts adjacent.

When the paroxysm is violent, and of long continuance, there sometimes happens an entire suppression of stool, so far that purgatives lose their force.

In this disorder a laxative diet must or should be complied with, and barley water with a little white wine in it, should be the common drink.

The cure regards the immediate fit, or to prevent the return of the paroxysm.

The following prescription has been made use of by the learned Doctor Brooks, as a specific in the complaint:

Take Spanish soap, four ounces; white sugar, two ounces; oil of sweet almonds, one drachm; and oil of aniseed, one ounce; make them into a mass for pills.

Doctor Brooks, in his Practice of Physic, vol. ii, p. 4, says, “ In the fit, I took a
 “ drachm of this every two hours, made
 “ into pills; since which time, I have been
 “ free

“ free from all nephretic pains and parox-
 “ ysms, which is now seventeen years.
 “ Not long after the first use of these pills,
 “ I made bloody urine once or twice,
 “ which used to be the forerunner of a
 “ terrible fit of the gravel; but, by having
 “ immediate recourse to these pills, it had
 “ no farther consequence. I have taken
 “ them several times since by way of pre-
 “ vention.”

If the vomiting prevents the medicines
 from staying on the stomach, he orders as
 follows :

Take lemon juice, half an ounce; salt of
 wormwood, twenty grains; extract of the-
 biac, one grain.

But the friars' balsam may do as well
 as the above, if taken to the quantity of
 three

three tea-spoonsful in a glass of wine or any thing else.

If the patient should not have relief by what is prescribed above, he may take one drachm of powder of the genuine uva ursi, twice every day, made into an electuary, with a sufficient quantity of white poppy syrup. And take the following drops three times every day in a large glass of Bath water from the cross Bath pump.

Take sweet spirit of nitre, half an ounce ; Spanish flies, hoglice, and liquid laudanum, of each one drachm ; camphire and volatile salt of amber, of each half a drachm ; mix them according to art, and take sixty drops three times every day in the Bath water ; or if that cannot be had, take it in veal broth, thin gruel, or in the solution of gum arabic.

The

The use of the uva ursi, accompanied with the drops, has done wonders in disorders of the bladder and kidneys; as also when the stone had been confirmed for years.

But, if the symptoms continue and grow more severe, and the costiveness remains, and the patient's strength is not too much exhausted, as also, if a vomiting do not continue, he may take the following bolus, after which make a frequent use of the uva ursi and drops :

Take calomel prepared, fifteen grains; pulvis sancte and jalap, of each one scruple; salt of amber, eight grains; camphire, six grains; salt of tartar, one scruple; oil of fennel, three drops; syrup of marsh mallows, a sufficient quantity to make a bolus.

When

When the stone is confirmed and large, or the fit has been of long continuance, and the patient feverish and plethoric, it will be necessary to draw off some blood, and to administer a gentle purgative clyster, and to repeat the injection to mitigate the symptoms; but if the patient be laxative, clysters without purgative ingredients should be injected.

Clyster. Take of the common decoction for clysters, two ounces; Venice turpentine, six drachms, dissolved in the yolk of an egg; oil of turpentine, half an ounce; oil of camomile, two ounces; chemical oil of juniper, one drachm; mix them according to art.

Anodynes and balsamic medicines should be administered in case of a confirmed stone, to mitigate the violence of the symptoms,
and

and put an end to the present paroxysm, or to gain a truce till the operation of lithotomy can be performed.

The only remedy to be called the greatest solvent in the present practice is, the caustic alkali, or soap-lees, with a certain quantum of liquid laudanum mixed with it.

But to give ease and keep off the paroxysms, the following electuary will be of the utmost service: Take uva ursi, in powder, two ounces, with a sufficient quantity of syrup of white poppies make an electuary; two tea-spoonsful of it to be taken three times every day, and, if washed down with half a pint of the Cross Bath Waters, will be very beneficial to the afflicted.

SECTION XXX.

OF THE DIABETES, OR INVOLUNTARY DIS-
CHARGE OF URINE.

EXCESSIVE drinking, strong stimu-
lating diuretic medicines, such as
tincture of cantharidies, spirits of turpen-
tine, and the like, are very often the cause
of the disorder.

The disease may also arise from a laxity
of the organs which secrete the urine, from
something that stimulates the kidneys too
much, or from a thin dissolved state of the
blood, which makes too great a quantity
of it run off by the urinary passages.

As we can have no certain criterion
whether this distemper is occasioned by the
juices being too much attenuated, or the
pores

pores of the glandulæ renales too much dilated, the best method we can take, is, to prescribe such medicines as will equally serve in both cases : and those must consist of astringents, anodynes, and balsamics, or agglutinants, which will not only serve to thicken the blood and juices, but also constringe the pores. I therefore recommend the following electuary :

Take of gum arabic, mastich, bloodstone, japon earth, dragon's blood and Peruvian bark, of each three drachms ; conserve of red roses, the same quantity ; balsamic syrup, a sufficient quantity to make it into an electuary ; and take the quantity of a nutmeg of it three times every day, and wash it down with two spoonsful of the following julep :

Take cinnamon and plantain water, of each five ounces ; red wine, two ounces ;
syrup

fyrop of lemons, three ounces; mix them together for use.

The following powder is also of infinite service in this disorder :

Take burnt allum and dragon's blood, of each one ounce; make it into doses of half a drachm each, and take one of them three times a day or oftener, if the stomach can bear it. With every dose take a tea-cup-ful of tincture of red roses.

Opiates are useful in this disorder, especially to take off spasms and to lessen the force of the circulation.

Or when the electuary is not agreeable, take two ounces of the best Peruvian bark, and infuse it in a bottle of old red Port wine, a glass of which may be drank three
or

or four times a-day ; if a few drops of elixir of vitriol be added to every glass, it will help the medicine greatly.

A draught of strong whey made with cows' milk and turned with allum, has had amazing effect upon this disorder, if taken three or four times every day.

SECTION XXXI.

OF THE DROPSY.

WHATEVER obstructs the perspiration, or prevents the blood from being duly prepared, may occasion the dropsy.

In the beginning, the legs swell, especially towards night, and then pit remarkably. The urine becomes very pale; the appetite decays, and, at length, the swelling rises higher, and appears in the thighs, belly, breast and arms; the face becomes pale and cadaverous; the flesh soft and lax; the urine thin, white, crude, and little; a difficulty in respiration comes on, and is attended with a slow fever and drought.

In order to assist nature in this disorder, the secretions must be promoted, and the
redundant,

redundant, stagnating juices must be carried off to invigorate the languid solids, and restore the humours to their natural fluidity.

The following pills are esteemed of use in all dropfical complaints :

Take aloes, two ounces and a half; gamboge, one drachm and half; diagridium, one drachm; gum ammoniac, one drachm and half; tartar of vitriol, half a drachm; solutive syrup of roses, a sufficient quantity to make it into a mass for pills: the dose from half a drachm to a drachm. This is to be administered three times a week, if the patient has strength to bear it; after the waters are evacuated, the afflicted should take a glass of the chalybeate wine two or three times every day.

Doctor Boerhaave orders a dose of mercurial preparation to be taken every other morning in the pulp of a roasted apple.

Take half a grain of turpeth mineral, with ten grains of white ginger.

Or,

One grain of red precipitate, with six grains of nutmeg.

Or,

Seven grains of calomel, with eight grains of winter's bark.

Either of the above prescriptions will attenuate the humours.

Doctor Brooks says, " Nothing cures
 " the recent anasarcaous dropfy sooner than
 " calomel, given to ten grains at a time,
 " with

“ with proper intervals to prevent a salivation, especially when assisted with a strong decoction of garlic, drank two or three times a day. The quantity may be a common drinking-glass full.”

Ball says, “ a large spoonful of unbruised mustard-seed, taken every night and morning, and drinking half a pint of the strong decoction of the tops of green broom after it, has performed a cure after other powerful medicines had proved ineffectual.”

Some have been cured by abstaining from all liquids, living upon crusts of bread or sea-biscuit, with a little salt, and a little rich wine. Heister mentions a woman that abstained from drinking a whole month, used to put a bit of toast dipped in brandy upon her tongue, which caused the saliva to flow into her mouth.

Saponaceous frictions upon the external parts should be always complied with.

The following infusion has been given with great success in the dropsy :

Take horse-radish and juniper berries, of each one ounce; broom ashes, one pound; put them into two quarts of Rhenish wine or strong beer, there let them remain a week, then strain off the liquor, and take a large tea-cup full of it three times every day.

In case the above remedies fail, recourse must be had to the manual operation, and draw the water off all at once through the cannula.

SECTION XXXII.

OF THE PILES.

SOMETIMES they are internal and cause great pain in going to stool, especially if the fæces are indurated, after which they often appear externally, and blood is seen upon the excrements. When they are external, or without the fundament, the touching of them, or sitting without a pillow, is commonly painful.

The patient should have a little blood drawn off as soon as he is convinced that he has them upon him, after which he may take of the following electuary :

Take flower of brimstone, half an ounce; lenitive electuary, two ounces; purified nitre, two drachms; syrup of oranges, a sufficient quantity to form it into an electuary. Take

the quantity of a large nutmeg twice or thrice a day.

And make the following astringent mixture hot, and bath them with it very often when they appear externally :

Take letharge of gold, two drachms ; extract of thebaic, one scruple ; mix them together for use.

Or anoint them with the following unguent two or three times a day :

Take a handful of shavings of cork, and burn them to ashes in any thing, then mix them with a sufficient quantity of hog's lard for use.

SECTION XXXIII.

OF THE HYSTERIC PASSION.

WHEN this disorder is occasioned by a suppression of the menses, too violent a flux of the lochia, the fluor albus (or whites), an impurity of the blood and juices, &c. the cause must be removed as soon as convenient; then anti-hysterics should be administered to keep the patient free from the disorder.

The fit is very often so violent, that the person is void of sense and lies as if dead; then of a sudden the respiration grows thick, short, and difficult; all the viscera are observed to have an irregular and convulsive motion, especially about the thorax; and a great tumour arises in the throat, idly by some supposed to be the uterus, by

which the person appears to be almost strangled.

The tumour which arises in the throat, proceeds from an irregular motion of the spirits and juices, causing a plenitude in these parts. During the swelling in the throat, the extremities are strongly convulsed and contracted, the patient being then possessed of much more strength than is natural; the voice is hoarse, and what they talk of is sometimes wildly and obscenely: they also very often laugh or cry without any provocation. Preceding these fits, she complains of a dulness, foreness and dizziness of the head, and presently falls asleep, which puts an end to the paroxysm for the present time.

In these hysteric disorders, the moderate use of wine, and chearful company, should be complied with.

In

In the convulsive strugglings, the following things may be applied to the nose :

Vinegar, volatile salt of hartshorn, sal ammoniac, and the like ; also may be given at the mouth, tincture of castor, spirit of hartshorn, tincture of foot, &c.

Burnt feathers, brown paper, &c. set on fire, and held under the nose, are of service in a violent fit. The temples may be also anointed with spirit of hartshorn, oil of amber, and oil of castor, an equal quantity of each mixed together.

If the paroxysm continue long, give a drachm of affaœtida, dissolved in four ounces of penny-royal water.

Women who are subject to these hysterics cannot bear much purging, therefore cly-

sters must be substituted in their stead, and they should be charged with anti-hysterics. But, when cathartics may be given at the mouth, give the following:

Take of the sacred tincture, two ounces and a half; elixir of property, one drachm; mix them for one draught. This may be repeated once in three or four weeks.

The following drops may likewise be given with great success, but they must be continued for a month or two, if the disorder is inveterate:

Take of compound tincture of castor, and elixir of property, of each half an ounce; tincture of foot, two ounces; and spirit of hartshorn, two drachms; mix them together and take a tea-spoonful of them in a glass of white wine three times every day.

If

If pills are more agreeable, make them of the following ingredients :

Take of the best shining wood foot, two drachms ; assafoetida, one drachm ; volatile salt ammoniac and myrrh, of each half a drachm ; oil of amber, sixty drops ; elixir of property, a sufficient quantity to make it into a mass for pills ; half a drachm of them should be taken every morning and evening.

In hysterical, and hypochondriac cases, a gentle vomit may be taken once a month to very great advantage.

The Bath waters and a residence in the town of Bath, may effect a cure by persisting in the use of the above medicines.

SECTION XXXIV.

OF THE GREEN SICKNESS.

THIS disorder is occasioned by an obstruction in the uterine vessels of young women, under or about the time of puberty, attended with a visidity of the juices, paleness, or green colour of the face, a difficulty of breathing, &c.

Sometimes it proceeds from a longing desire after some particular male person, or the want of exchanging a single life for that of a married one. It may also proceed from an obstruction of the menses, or from an alteration of the fluids at the time they begin to flow, or from a sluggish, languid motion of the blood, whether acquired or natural; and this must certainly be the cause of it to those who are too young to suffer any hysteric disorder.

In

In this disorder the thighs, feet, and ankles swell towards night, especially if the disorder proceed from obstructions. The patient also complains of a heavy weight about the loins, a pain in the head, and palpitation of the heart; the pulse is quick and low, and a depraved appetite; or a desire to eat such things as are unwholesome, as coals, stones, clay, chalk, and the like.

The following cathartics act as alterants, and lie a considerable time in the body before they operate, therefore they may be depended on to answer their intent:

Take of Rufus's pill, fifteen grains; salt of steel, five grains; oil of savin, two drops; mix them according to art, and make them into three pills, and take them going to

N. 6 bed,

bed, and wash them down with a glass of white wine.

These pills may be taken three times in one week, after which, make the following electuary, and make use of it as directed :

Take powder of steel, half an ounce ; species of diambraë, two drachms ; conserve of wormwood, six drachms ; oil of cinnamon, four drops ; syrup of saffron, a sufficient quantity to make the whole into an electuary. Take the quantity of a nutmeg twice every day, and wash it down with one spoonful of the following julep :

Take of black cherry water, four ounces ; compound briony water, two ounces ; syrup of citron peel, and syrup of steel, of each half an ounce ; compound spirit of lavender and saline aromatic spirit, one ounce ; mix them together for use.

Or,

The following julep alone may be of great use where the hysterical and hypochondriac complaints are blended to the disorder as they in general are.

Take of penny-royal-water, four ounces ; of compound valerian water, two ounces ; of tincture of castor, two drachms ; of the volatile salt of hartshorn, ten grains ; or of the spirit of amber, a drachm ; of white sugar, six drachms ; mix for a julep. The dose is two spoonful three times a day.

SECTION XXXV.

OF DISEASES IN INFANTS. OF THE
MECONIUM.

NEW-BORN children are generally afflicted with the retention of the meconium, and other fordes in the primæ viæ, which cause griping pains in the belly, and make the child so excessive uneasy, that it cries without intermission. Those fordes in the stomach and bowels of children are very apt to cause the hiccoughs, the jaundice, wakefulness, startings, convulsions, and other disorders, unless timely prevented, which for want of such care often prove fatal.

Many authors have advised a number of very simple remedies to cleanse those fordes, and amongst all of them, there cannot be a more innocent one than to give it a couple

of tea-spoonsful of sweet oil mixed in coarse sugar. But, if the child should not void the meconium, it will then be necessary to give it a grain of jalap in powder, in a little of the solutive fyrup of roses, or a small quantity of that innocent white powder called Magnesia Alba may be given occasionally, which will cleanse the first passages, and force away the meconium by stool.

SECTION XXXVI.

OF WIND AND COSTIVENESS.

WHEN the infant has retained the excrements for any time, they become hard, and cause an uneasiness in the bowels, and are productive of wind. Nothing can be of more service to open these obstructions in children than small quantities of magnesia alba, I therefore propose it as a general, and most innocent medicine to be depended on for all their internal disorders, particularly for those in the month, to six months old.

There are a number of disorders that arise in children from sucking a nurse that feeds upon sour fruit, and that makes a too frequent use of acids, &c. Therefore they should be avoided.

SECTION XXXVII.

OF RESTLESSNESS OR WANT OF SLEEP.

CHILDREN thus afflicted, are in exquisite pain in their bowels and stomach, occasioned by acidities, wind and costiveness.

In these disorders, it will be necessary to administer a clyster of the following ingredients :

Take of Venice soap, half a drachm ; sal gemm. three drachms ; fennel-water, an ounce and half ; mix them over a slow fire till they are dissolved, and inject it milk warm.

If the clyster has not immediate effect, you may venture to give the child two drops of thebaic tincture in a tea-spoonful of solutive syrurp of roses.

But

But as I said in the above Section, small doses of the magnesia alba, given pretty often, will best answer the end in all these obstructions. It is the most innocent medicine that can be made use of for children's disorders. It is a useful anti-acid, and inoffensive laxative, and may be given to children in quantities, from ten grains to twenty, in a little syrup of roses. And grown people may take it from one drachm to three, by way of a laxative cooling medicine.

SECTION XXXVIII.

OF THE OPENNESS OF THE SUTURES OF
THE HEAD.

THE heads of young children are generally too open, when their constitution is weak and watry, and the sutures of the skull are not finally closed up, or the cranium on that part not so hard as the rest, for two or three years after their birth.

When an infant takes a cold it causes an openness, or distance between the bones of the skull, and, if it continues long, it is reputed a sign of weakness and short life.

In order to strengthen and brace the unclosed parts, rub the head over with a little warm brandy, mixed with the white of an egg and palm oil; and, in order to keep

th

the head warm, apply a piece of red cloth over the weak part, and keep it on till the futures are intirely closed.

When this disorder proceeds from a collection of water in the head, it is to be cured by making issues in the occiput or back part of the head, or in the neck, perpetual blisters, and the use of calomel blended with cathartics, as often as the child can bear them ; but, if the collection of water be inside the skull, no cure can be expected.

Children are also subject to a disorder of the head diametrically opposite to the one above mentioned, commonly called the Head-mould-shot ; the signification of which is, the close locking of the futures, and their riding over each other, through which they compress the meninges, or brain itself.

In this case there is no cure to be expected, but by manual operation, or a devulſion of the futures.

SECTION XXXIX.

OF THE THRUSH.

THIS disorder affects the lips, gums, inside of the cheeks, tongue, palate, and fauces; and sometimes they descend through the œsophagus to the stomach and intestines, and to the anus; which, when they come to that height, the infant generally falls a victim to the cruel disorder.

If the aphthæa appear of a pale, pellucid, few in number, superficial, soft, and fall off in an easy manner, they are not dangerous; but if they are of a yellow, black, brown, and thick, or run together in one intire scab or ulcer, they are very bad. If the fever rise high, it will be proper to apply a blister to the neck, and give the child the following powders:

Take

Take rhubarb, five grains; magnesia alba, half a drachm; rub them together in a marble or glass mortar, and divide it into six doses, and give one of them to the child every five hours, till they operate.

The best thing to give them in is the child's food, or a little syrup of white roses.

The following mixture may be made use of to wash the ulcers of the child's mouth with :

Take rose-water, three tea-spoons-ful; honey, one ounce; burnt allum, half a drachm; borax, in fine powder, one drachm; mix them very well together, then, with your finger, or a bit of soft linen rag, rub it on the parts affected :

Or,

Or,

Dissolve six or seven grains of white vitriol in half a pint of barley-water, and wash the infant's mouth with it.

Or,

Take honey of roses, two ounces ; French bole in fine powder, half a drachm ; mix them together, and wash the child's mouth with it several times every day.

SECTION XL.

OF INFLAMMATIONS AND EXCORIATIONS.

GALLING and excoriations are common to young children, and are chiefly seated about the groins and wrinkles of the neck, behind the ears, and under the arms.

The most effectual means to prevent the parts from being sore, are, to keep the child clean, by often changing its linen, and frequently washing the parts with cold water.

These excoriations in the groins are generally caused by the acrimony of the urine, which frets off the epidermis or first skin, and leaves the cutis bare.

O

Powder

Powder of white lead, tutty, chalk, crabs claws prepared, litharge, flower, starch, &c. are frequently applied to relieve the child of the complaint; but the best and most innocent application, is a little fuller's earth dissolved in hot water. This is a powerful drying earth, and may always be used without any danger. Some people dissolve a little white vitriol in rose-water, and wash the parts affected with it; others make use of burnt slate with good success.

SECTION XLI.

STOPPAGE IN CHILDRENS' NOSES.

INFANTS nostrils are very often plugged up with nasty mucus, which prevents their breathing so much, that they have not power to suck the nipple.

When this is occasioned from the child's having a cold in its head, it will be necessary to administer the powders as directed in the XXXVIIIth Sect. then take of white vitriol, two grains, and four grains of elaterium; dissolve them in a table spoonful of marjoram-water, and often wash the child's nostrils with a little of it. This may be done where the case proves obstinate; but, if the nurse wou'd take a little trouble, and rub into the infant's nose some tallow, sweet-oil, fresh-butter, or the like, every evening, with a warm finger, it

would prevent the mucus from growing hard in the nostrils, and perhaps also save the child from being suffocated; for it resolves the filth, and causes the child to breathe freely.

The elaterium, white vitriol, and marjoram-water, are only to be used in very obstinate cases.

Or,

Apply oil of sweet almonds, impregnated with the oil of marjoram, to the bottom and sides of the nostrils, which will soon resolve the filth, and render the respiration free.

HEISTER.

SEC-

SECTION XLII.

OF ERUPTIONS ON CHILDREN.

DURING the first three or four months after their birth, eruptions often appear on the head and feet; and are sometimes almost covered therewith, so that they very often appear in one continued scab.

These, and most other eruptions of children, are chiefly owing to improper food, and neglectfulness of the nurse in keeping it clean and wholesome. Stuffing children at all hours with food that their stomachs cannot digest, is productive of gross humours, which fly or break through the skin, and creep all over the body.

A filthy manner of raising children, not only causes eruptions upon their skin,

but is likewise the cause of many internal complaints also.

The children of the poor, and of all who despise cleanliness, are almost constantly found to swarm with lice and fleas, and are generally covered with the scab, itch, or eruptions of some kind or other.

Children that are thus afflicted, should have gentle cathartics administered, and the scabs should be anointed with a little cream, or oil of almonds, some apply yellow basilicon, spread thin upon linen which promotes the discharge of the matter. But when such cases grow inveterate, or turn to a scurf, or scald head, the specific drops must be given for a long time, as directed for the cure of the scurvy, prepared by Dr. Freeman, in Prujean Square, opposite Surgeon's Hall, and, for the benefit of the poor, are sold very cheap in most towns in this kingdom.

SECTION XLIII.

OF COUGHS AND DIFFICULT BREATHING.

A BAD constitution of the air, or a severe cold, may cause these disorders; in which the serum of the fauces, bronchia, and aspera arteria, is rendered acrid, and excites coughing and difficulty of breathing.

To begin the cure, the redundant matter must be expelled by cathartics, and the perspiration must be restored by diaphoretics.

The nurse should take the following purge:

Take powder of jalap, twenty-five grains; oil of carraway-seeds, two drops; mix them together in a mortar, and take

it in a cup of tea at breakfast-time. Then the next day, give the child a quarter of a grain of tartar emetic as a vomit. This, though so very trifling, will save the child's life, when it is nearly choaked: if respiration continues bad, repeat the vomit the third day, without any hesitation whatever: after which, make frequent use of Gascoyne's powder; about ten grains to be given twice or three times every day.

When a child has got a troublesome cough, give it a small spoonful of the following julep, pretty often:

Take of penny-royal water, four ounces; syrup of marsh-mallows, two ounces; syrup of balsam, one ounce; mix them together for use.

SECTION XLIV.

DIFFICULTY OF BREEDING THE TEETH.

CHILDREN begin to shew the symptoms of dentition about the fifth or sixth month after the birth, at which time the incisores, or fore-teeth, make their appearance through the periosteum and gums; next the canini, or dog-teeth, and lastly the molars, or grinders. About the seventh year, there appears a new set; and, at twenty-one, the two inner grinders, called *Dentes Sapiaentia*, the Teeth of Wisdom.

Whilst children are breeding their teeth, they commonly have an itching, heat, pain, and swelling in the gums; the saliva or water runs from the glands of the mouth in large quantities; they are uneasy, restless; a hot fever, looseness, or costiveness, and very often violent convulsion fits come on,

and continue till the teeth break through the gums.

In fevers occasioned by the pain and anguish in cutting the teeth, there is no remedy so effectual as spirits of hartshorn; five or six drops may be given to the child in a little cold water every four hours, for five or six times, or oftener.

When an inflammation runs high, there must be a leech immediately applied under each ear; and, when the gums are much swelled, it is then time to open them; take a sharp pen-knife and cut them down to the tooth; this I have done myself to many children, with the greatest success.

A proper use of laudanum, with the testaceous powders, is a safe and effectual remedy to give the child ease, and to cause it to sleep.

If the child be costive, it will be proper to give it the magnesia alba with rhubarb, fenna, or the like, or administer emollient clysters: the latter will be most proper where immediate relief is required.

In order to give some relief by an external application, take of oil of sweet almonds one ounce, with the same quantity of syrurp of wild poppies, and about twenty drops of spirits of vitriol, well mixed together; rub some of it very often on the infant's gums, and put some of it on the coral, and let the child use it occasionally.

SECTION XLV.

OF THE RICKETS.

THIS is a disorder which affects the bones of children, and causes a considerable protuberance, incurvation, or distortion therein, and attacks them betwixt the age of nine months and two years of age.

Children begotten by men in the decline of life, who are subject to the stone, gout, or other chronic diseases, or who have been often in the venereal disease in their youth, are very liable to the rickets; so that the female ought to inform herself, as much as possible, whether or not her lover has not been thus disordered; then, if she marries such a person and proves fruitful, she must expect bad disorders will attend her innocent babes.

The

The rickets may likewise be occasioned by some natural defect in the digestive faculty; whence the aliment coming to be unequally or irregularly applied to the body, some parts of the bones increase in bulk more than the rest. The same may also happen from a natural or acquired viscidness of the food. But the most evident cause of this disorder is, the violence done to the parts of the tender bodies of infants, by pressure, or swathing, which may wreathe the fibres of the bones, whilst they remain in a cartilaginous state, and so prevent the equable growth and increase thereof. Luxations, distortions, fractures, and other accidents occasioned by falls, blows, or such external injuries, may also be the cause of the disorder.

In this disorder, a physician can be of little or no use; a good nurse, with a pro-
per

per use of a cold-bath, will be the only means of helping the child out of its unhappy situation; to which may be added an infusion of the best rhubarb in small beer, which the child must take as common drink, to keep its body laxative, and may be made as follows :

Take half an ounce of the best rhubarb sliced, and infuse it a day or two in three pints of small beer, and give the child a spoonful of it occasionally. When it is about half out, fill it up again, and make use of it as before directed.

This innocent remedy is recommended by the learned Sydenham as a specific in decay of nature, loss of appetite, and many internal disorders; but he orders it to be given to the infant both by night and by day.

SECTION XLVI.

OF THE WORMS.

WHEN children are troubled with worms they generally have a stinking breath; a hard or inflated belly; voracity; thirst; feverishness, with glowing cheeks; heaviness and pain in the head, sleepiness; vomiting; and pain in the stomach or bowels; a dry cough; convulsions; fainting; cold-sweats, and loss of flesh; their stools are frothy, green, greasy, and very often comes off like fuller's earth when dissolved in water. If the child is not too far emaciated, and has any strength left, the following purging powders should be given, and worked off with warm tea, or gruel.

Take rhubarb, jalap, and calomel prepared, of each equal parts; double refined sugar, the weight of the whole;
grind

grind it all together in a marble mortar, and make it into doses.

A child of eight months or a year old, may take six grains; those of two years old may take twelve grains; and children of four, five, and six years of age, may take from twenty to five and twenty. These powder should be given to them twice a week; and, at intervals, let them take the following electuary every morning and evening when they do not take the powders:

Take of prepared tin, two ounces; worm-feed, in fine powders, four ounces; mix them well together in half a pound of common treacle, and give a child of two years old a tea-spoonful of it twice a day, and for every year older, add a tea-spoonful in proportion to their age.

This,

This, with the use of the above powders, will destroy all kinds of worms in children. But care must be taken not to let them drink any thing cold whilst they are taking the powders.

During the cure, the child's common drink should be as follows :

Take four ounces of quicksilver, put it into one quart of water, and boil it about ten minutes, and when cold, it is fit for use *, and nothing can be of so much service, or more safer.

Take care of the quicksilver, and it will serve for ever for that use.

* The child's tea may be made with the water, if agreeable to its parents, and may be given blood warm.

SECTION XLVII.

THE FOLLOWING SELECT PRESCRIPTIONS
ARE NOW PRACTISED IN THE HOSPITAL
OF SAINT GEORGE, SAINT THOMAS,
GUY, AND SAINT BARTHOLOMEW, IN
LONDON.

Shell Lime-water for the Stone and Gravel.

TAKE calcined oyster-shells, one pound,
and pour upon it a gallon of boiling
water; let it stand five or six hours on the
shells, in an earthen pan. Three pints to
two quarts of this water should be drank
every day; to every draught may be added
a little new milk, to make it palatable.

St. George's Hospital.

*A Decoction to sweeten the Blood and Juices,
after taking a Mercurial Preparation,
or after being salivated for the Venereal
Disease.*

Take fassafras chips, four ounces; guaiacum, one ounce; liquorice-root, two ounces; coriander-seeds bruised, one ounce; infuse them in a gallon of lime-water, four or five days. Take from three half pints to two quarts every day, as a bracer: this is to be made use of for a month or six weeks. *St. George's Hospital.*

Gentle purging Water.

Take of the water from the Spa, at the Dog and Duck in Saint George's fields, three pints; powder of ginger, one drachm; boil them together till one half be evaporated, and then add one ounce of manna: this may be taken twice a week, and is
very

very gentle in its operation. *St. George's Hospital.*

A Bolus to stop spitting of Blood, and may be given to Women who are troubled with Weaknesses.

Take of conserve of red roses, one scruple; of roche-allum, half a scruple; and, with a sufficient quantity of simple syrup, make it into a bolus. This bolus may be taken twice or thrice a day. *St. Bartholomew's Hospital.*

A Bolus for an Intermittent Fever.

Take of myrrh and allum, of each five grains; of camomile flowers, half a drachm; and, with a sufficient quantity of simple syrup, make it into a bolus, or an electuary. Take the size of a nutmeg three times a day. *St. Thomas's Hospital.*

A Di-

A Diaphoretic, or Sweating Bolus.

Take of gum guaiacum in powder, twenty grains ; conserve of roses, and a sufficient quantity of simple syrup, to form a bolus, to be taken morning and evening. This is good in all cutaneous disorders as proceed from obstructions, and is particularly serviceable in the rheumatism and gout. *St. Bartholomew's Hospital.*

A Bolus for the Gravel and Stone.

Take hard soap, one ounce ; oil of aniseeds and carraway seeds, of each half a drachm ; and, with a sufficient quantity of simple syrup, make it into a mass. Take one drachm of it three times a day. *St. Thomas's Hospital.*

A Sto-

A Stomach Bolus.

Take of ginger in powder, and long pepper, of each fifteen grains; conserve of orange-peel, twenty grains; and of simple fyrup a sufficient quantity to make a bolus. This is to be taken occasionally for pains in the stomach and bowels occasioned by wind. *St. Thomas's Hospital.*

An Electuary for Worms.

Take of prepared tin, one pound; conserve of wormwood, two ounces; and, with a sufficient quantity of simple fyrup, make an electuary. Take the quantity of half an ounce of this electuary every morning, and it will destroy all kinds of worms in grown persons. *St. Bartholomew's Hospital.*

An Embrocation for all Kinds of Pains and Swellings.

Take of liquid laudanum and spirits of sal ammoniac, of each half an ounce; camphorated spirits of wine, three ounces; mix them well, and they are fit for use. This is to be well rubbed into the parts affected two or three times every day. *St. George's Hospital.*

A Gargle for a Putrid Sore Throat.

Take of barley water, one pint; vinegar, two ounces; tincture of myrrh, half an ounce; aromatic tincture, two drachms; put them all together in a bottle, and shake it, then it is fit for use. This gargle is to be made use of three or four times every day. *St. George's Hospital.*

*An Infusion for an Asthma and difficult
Breathing.*

Take of elecampane root and garlic sliced, of each one ounce; liquorice root, three drachms; anniseeds and carraway feeds, of each half an ounce; put them into three quarts of boiling water, and infuse them till they are cold; then strain off the liquor for use. Half a pint of this infusion may be drank twice or thrice every day. *St. George's Hospital.*

A Mixture for Deafness.

Take of fresh drawn oil of almonds, three drachms; spirit of sal ammoniac, one drachm; mix them together in a bottle for use. Every night when you go to rest, let a few drops be instilled into the ear, and stop it in with a bit of wool or raw hemp. *St. Thomas's Hospital.*

Pills for the Whites in Women, and for stubborn Gleets.

Take of rhubarb in powder, one ounce; of boiled turpentine, three ounces, and with any fyrup make a mass for pills. Take one scruple of these pills twice every day. *St. Bartholomew's Hospital.*

A Strengthening Plaister for the Back.

Take four pounds of the strengthening plaister of the London-Dispensatory, and of strained opium, four ounces and a half: This must be spread on leather, and applied to the loins: it is of the utmost service in all weakneses and pains, and particularly for young children that is troubled with the rickets. It may be made long enough to go from the neck down to the rump. *St. Thomas's Hospital.*

A Plaister for the King's Evil.

Take of the plaisters of mercurial and hemlock, of each four ounces; of camphor, three drachms; mix them well together for use. This is to be spread upon coarse linen, or leather, and applied to the parts affected. *St. George's Hospital.*

An Ointment for a Scald Head.

Take of tar, one pound; common brimstone, four ounces; of yellow wax, one ounce; make them into an ointment, and spread some of it on the child's head, and then cover it all over with a hog's bladder. *St. George's Hospital.*

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For the Explanation of these Figures, (See Page 430)

Fig. 1.



Fig. 2.



Fig. 3.



Fig. 4.



Fig. 6.



Fig. 7.



Fig. 8.



Fig. 5.



Fig. 10.



Fig. 11.



Fig. 12.



Fig. 9.



Fig. 13.

SECTION XLVIII.

THE MIDWIFE, EXCELLENTLY TAUGHT BY QUESTION AND ANSWER; TO WHICH IS PREFIXED TWENTY-SIX IMPORTANT RULES OR APHORISMS, GROUNDED UPON EXPERIENCE, BY AN EXTENSIVE PRACTICE.

DOCTOR.

S O, Sophia! you are come, I suppose, to claim a promise I some time since made you, of giving you some instructions in the Art of Midwifery?

MIDW. Yes, Sir; and I hope I do not trespass on your better avocations.

DOCT. No, no: sit down, and let me question you concerning the progress you have already made in the business. Pray,

how long have you taken up the profession of a midwife?

MIDW. About two years, Sir.

DOCT. I think you have been under the tuition of our celebrated midwife Mrs. —?

MIDW. Yes, Sir; ever since I first thought of practising.

DOCT. Well, I suppose she has taught you a great deal in all this time?

MIDW. No, Sir; I cannot say I think she has: for though I have attended her at most of the labours she has been called to, and have sometimes assisted her in the very act of delivery, yet I find myself very much at a loss for want of having things explained to me, how to judge whether I proceed safely or otherwise.

DOCT.

DOCT. Why, what then does not she give you reasons for every step she takes in her practice?

MIDW. No, Sir.

DOCT. Poor work, indeed, Sophia! But perhaps the truth is, she cannot. For it is a parallel case with a great many persons who can read well; they cannot impart, or teach, what they understand ever so well themselves. For there is a method necessary to every one that would teach, and this is not known to all; nay, perhaps, but to few: and this method supposes a bringing the whole of any sort of knowledge, that is to be communicated to another, into certain short and compendious rules, that too great a burthen be not laid upon the memory.

MIDW. So I believe, Sir.

DOCT. And pray what methods did your instructress take to initiate you in the art?

MIDW. Why, Sir, she shewed me, first of all, in what posture to deliver a woman; next, how to pass my fingers or hand; then, how to cut the navel-string; and lastly, how to bring away the after-birth.

DOCT. Very good. But did she ever take any pains to give you an idea of the parts concerned in delivery?

MIDW. No, Sir; for I suppose she understands little enough of them herself.

DOCT. Well, and did you ever hope to make any tolerable proficiency in the business.

ness without a good acquaintance with them?

MIDW. I do not know, Sir. I cannot say but that I thought some knowledge of that kind both useful and necessary; but then, as I imagined, that this was commonly attained only by men, and that the successful practice of midwifery depended mostly, or altogether, on large and frequent experience, I thought I should have neighbour's fare (as we commonly term it), and that I could attain as much knowledge in the same space of time as the rest of my profession.

DOCT. Ay, but there was your mistake: and indeed this has been the fatal error of perhaps most women, who either have or do practise this noble and most useful art. And if you will believe me, Sophia, I assure you, both from my own experience,

and the most indisputable authority, that the knowledge of those parts of the body which are concerned in delivery is so absolutely necessary, that the best and ablest of midwives cannot practise safely (notwithstanding they may have a plausible success) without it: for it is the foundation and quintessence of midwifery.

MIDW. But, Sir; how can we women come at this sort of knowledge which you say is so absolutely necessary? We cannot get, neither if we had them could we dissect, dead bodies.

DOCT. True; but then you can apply to the surgeons for information, cannot you?

MIDW. Yes, Sir; that is true: but alas! ———

DOCT. Alack! what?

MIDW.

MIDW. Dear Sir! — methinks that is so strange!

DOCT. What is strange?

MIDW. Why, Sir, to talk with you about such things; it looks so——

DOCT. Oh, what you are pleading upon the score of modesty then? Good lack-a-day! What do you think then that we know no better use of our understanding in these affairs than to prostitute what we know to so base an end as that of soothing our wanton imaginations?

MIDW. No, Sir; God forbid that we should harbour such bad thoughts of you! But yet (if I may speak without offence) there are some gentlemen of your calling that are not quite so scrupulous as they

should be of exposing the secrets of our sex, and of putting us out of countenance when we come to ask them a modest question : which perhaps may make us more backward than otherwise we should be of speaking our minds so freely to them.

DOCT. I will not undertake, Sophia, to excuse every one of our profession in this particular ; for (to their shame be it spoken) I fear that, among the great number of them, there are too many that make a ludicrous use of what should be kept as the greatest secrets. But then, as I do not wholly excuse those of my own profession and sex, so neither must you some of yours ; for I must tell you, it is too common a complaint of the modest part of woman kind, against the women-midwives, that they are bold, and indulge their tongues in immodest and lascivious speeches to the shame of their sex in general, and to the
 disquiet

disquiet of the more sober and modest part of them.—But to our purpose. You can read and write, I suppose?

MIDW. Yes, Sir. But pray why that enquiry?

DOCT. Oh, a very necessary one, Sophia!

MIDW. Why, Sir? Cannot our mistresses teach us the art, without our being obliged to consult authors? What do we give them such large rewards for, if after all we must be forced to read books?

DOCT. I ask that question, Sophia, rather to inform myself of your capacity in general, than to satisfy any vain curiosity of mine. For though I own, that it is possible for women that can do neither, to make a tolerable proficiency in the busi-

ness (but by the way I must tell you, these are not often to be met with), yet I cannot by any means think that this sort of people are generally to be encouraged. Nay, they should be the last set of people that should be sent out into the practice; since it is certain, that they must, with much more difficulty, and with a larger allowance of time, acquire their knowledge than those who have had the superior advantages of education. Besides, these people do commonly want that other, almost inseparable, talent,—a good and prudent deportment; which is another necessary qualification in a good and understanding midwife. And I must observe to you farther, that I think that our British ladies, who reside in each parish (in the country especially) do not manage well, in giving any encouragement at all, to the stupid and illiterate sort of people who take upon them, in the most despicable capacity, to practise this art.

Let

Let these people spin and card (the properest employment for them), and let those unhappy women be the objects of their patronage, in this particular, whom adverse fortune (supposing their capacity sufficient) has reduced from a more easy condition, and a fortune, once unapprehensive of want, to distress and ignominy. I say I would have these first encouraged, and a better stipend allowed them.

MIDW. Why, Sir, I cannot but allow, that what you observe is just and reasonable enough.

DOCT. It is highly so, Sophia, in the nature of things; for what persons are so fit to act the drudgery part of life as those who have, from their cradle, been inured to get their bread by the sweat of their brow? And who so proper to be engaged in a work, which requires the use and trial
of

of the understanding, as those who have been accustomed to thought and reflection? and who, having from their very childhood (events unforeseen having made their case otherwise) been unacquainted with labour, are equally unfit for a condition that is entirely servile?——But to go on:——I suppose your tutors recommended to you some books?

MIDW. Yes, Sir; she recommended to me two; the one she calls Chamberlain's Midwifery, the other Daventer's.

DOCT. And pray what light have you gathered from either or both of them?

MIDW. Why really, Sir, I cannot say that I am much the wiser since I read them?

DOCT.

DOCT. Why, they are both reckoned good pieces.

MIDW. Yes, Sir, that they may be forgot I know; but they are either of them above my understanding, and I doubt above that of my mistress too.

DOCT. True, Sophia: though there are a great many good things in both of them yet it is certain, they are not adapted to the capacity of women; especially that of Chamberlain's (by the way Chamberlain is only the translator) which, as Daventer justly observes, is calculated rather to make women physicians than midwives.

MIDW. There are so many hard names in them, that I am very much puzzled to understand them.

DOCT.

DOCT. You say right, Sophia: they should not use those terms without explaining them, if they really intended that women should understand them. Could you ever conceive from the cuts in Chamberlain any tolerable idea of the parts he there describes?

MIDW. No, Sir; I cannot tell what to make of them.

DOCT. No wonder, Sophia, since they are very false ones, I assure you.

MIDW. What think you of those of Daventer?

DOCT. Why, they are most of them just and true ones; especially his description of the pelvis, the placenta (or after-birth), the womb itself, and its neck, and all the postures

tures of the infant in the womb, which he calls *well-seated*; that is, that does not lean either backwards or forwards.

MIDW. But he talks much of an oblique situation of the womb in some women. Pray what does he mean by that?

DOCT. Why; he would persuade you, that, in some women, the womb leans either backwards or forwards, or to the right or to the left side, so that the mouth of the womb does not present itself (as naturally it should) directly against the vagina (or neck of the womb) but lies high; so that it is difficult for the hand to come at or find it: and from that cause he says that most of the difficult labours proceed. But there are not many men who practise midwifery, or many anatomists, that agree with him in his opinion: and as for my own part, though I must confess that I am
not

not averse to his opinion, yet I am not fully satisfied that he is in the right, though the situation of the womb in a body which I lately opened (which was that of a woman within an hour or two of delivery) did more than a little incline me to believe Daventer was not quite mistaken. He was a man of large experience, and I believe of an honest principle, and therefore not rashly to be disbelieved. But there is one thing which makes his book not altogether so profitable to women, and that is, its tediousness. You lose the marrow of his instructions (if I may use the term) while you are breaking the bone to come at it; so that I have often thought that a good and judicious abridgment of it would be perhaps the best and most useful book upon the subject. For, indeed, what is really useful in the book, is, in a great measure, lost while you are pursuing his argument (which is sometimes unnecessary) and reading his reasons.

reasons. But there is one thing in this author, for which, I think, he deserves a great deal of praise: I mean his treating so well, and so particularly of the circumstance of touching, a very necessary article in midwifery! and yet handled to no considerable purpose by any body that I know of besides himself. In short, with all his imperfections, I think I may, with justice, and without derogation from the character of any other writer upon the subject, say of him, that he has written (all things considered) the plainest, the fairest, and most fully of any one I have ever yet met with.

MIDW. Then I suppose, Sir, you would advise me to read him?

DOCT. Why yes, as he is a worthy author, I would not dissuade you from perusing him; but it must cost you some pains to understand him well.

MIDW.

MIDW. Pray, Sir, are there no other pieces on the subject?

DOCT. Yes; there is a piece written by Dr. Mowbray, in two volumes; another by the late Mr. Giffard; and a third by Mr. Edmund Chapman.

MIDW. Pray, what character do they bear; or rather, what is your opinion of them?

DOCT. Either of the two latter may be of use to you, being practical pieces; but the former was not written for the information of your sex; being the substance of some lectures which he read in London to his pupils, who were mostly men.

MIDW. Thus far, Sir, you have proceeded greatly to my satisfaction; but I am afraid I offend by asking so many impertinent

ment questions: yet I hope you will excuse the weakness of my sex. And now (if I have not already wearied you) pray inform me, what steps I ought really to take to become so far mistress of the art, as to be able to practise at least with safety, if not always with success?

Doct. Why, I will tell you, Sophia. It is (as I have already hinted to you), before all things necessary, that you get acquainted with the true structure of the parts concerned in delivery: there are the vagina (or passage into the womb), the womb itself, and the bones which form the pelvis (or basin). You must also learn, how to touch a woman, and by touching, to know whether her labour be at hand or not; whether the pains be true or false ones; whether the labour will be difficult or easy; whether the infant be well or ill situated; whether the birth should be promoted

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or not, or the woman delivered before the usual time; whether the child be alive or dead, and the like. Then again, you should inform yourself, how the after-birth should be safely taken away; how the child should be turned, when found in an ill posture; and which is the best method of bringing it away. When you can get thoroughly mistress of these things, you need not much fear success in your practice. And you will always find this advantage attending your being well instructed in these particulars; that you will, at least, be capable of judging when there is a real difficulty, and of declaring in time the necessity of better help; and so will avoid falling into the common mistakes of desperate and daring midwives, who keep poor unhappy creatures so long under their hands, till the case becomes deplorable, or perhaps, remediless: and you will escape the censure of the standers-by to your own
fatig-

satisfaction and credit. For believe me, Sophia, it is much more for a midwife's credit, to be able to satisfy the people that the case is truly dangerous, and honestly to resign the woman into the hands of one of superior understanding, than by a vain ambition to enhance her own reputation, to torture the poor sufferer one hour after another, and to draw upon herself the disgrace of being at last unable to accomplish the design; and of leaving the languishing patient to expire under her hands.

MIDW. What you observe, Sir, is very just.

DOCT. Well then; now I will proceed to give you the best and plainest description I can of the parts; and first of all of the vagina. This is one strait passage, which goes directly up to the mouth of the womb. It is seven or eight inches more or less in
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length.

length. Its width cannot justly be determined, because it is narrower or wider, as the woman is nearer or farther off her time of delivery. It is always wide enough (in a woman well made) towards the time of labour to admit your whole hand easily to pass: its inside cavity has wrinkles, which contract it as occasion requires. Where this ends, the mouth of the womb begins, which I am next to describe to you. Its shape resembles pretty much, as some authors say, a pear; but I would rather chuse to compare it to a purse turned upside down. It is seated between the bladder and the strait gut*. In women that are not with child, or such as have gone but a little time, the orifice, or mouth of the womb, feels hard, thick and pointed, not unlike a small nibble, but rising more to a point. And as the woman grows bigger, it grows softer, thinner, and more smooth:

* The strait gut is the last gut of all.

so that, in some of the last weeks, you may, by your fingers, perceive it to open as wide as a shilling, or wider; and, by turning your finger round, you may distinguish it to make a sort of ring. All within the womb go two thin membranes, which contain the waters in which the infant is suspended; which membranes, when the womb opens, slip more or less through it into the vagina. To the top * of the womb adheres the placenta (or after-birth), whose blood-vessels communicate with the substance of the womb itself. It is from the breaking of these vessels, which the drawing away of the after-birth must necessarily occasion, that what you commonly call Floodings ensue; so that if this separation of the vessels of the placenta happens before the woman is at her full account, and an immoderate quantity of blood is found to

* Other authors call this the Fund, or Bottom of the womb.

flow, you may be certain, that the woman will miscarry ; and be assured, that, if other symptoms concur, she ought, without delay, to be delivered, if you would save either the mother or the child. For as the blood flows by the navel-string (which is continued from the child to the placenta), from the mother to the child, and the child's life is by this means maintained ; so if the placenta be totally separated from the womb, all communication between the mother and the child is prevented, and of consequence, the child must begin to die for want of that circulation of the blood from the mother to it, by which it was kept alive.

MIDW. Good lack ! Sir, I never could before learn, nor comprehend, from whence those floodings proceeded : for my instructress could never tell me.

Doct.

Doct. No, Sophia: perhaps not. This is an advantage which accrues to us men from anatomical knowledge; a privilege denied by Providence to your sex.

MIDW. But pray, Sir, what does the child wholly subsist by means of that circulation from the mother to it? Does it neither eat, nor drink, nor breathe of itself?

Doct. Ay, Sophia, it subsists wholly by means of that circulation from the mother. It neither eats, nor drinks, nor breathes of itself.

MIDW. That is very strange to me, Sir.

Doct. As strange as it may appear to you, it is very true. For, indeed, Sophia, there is no occasion that it should do either of them; the child being, while it is in the

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womb,

womb, no other than a part of the woman's body, which may as well be nourished by these means, as an arm, or leg, or any other part of the body. The ancients, indeed, before the circulation of the blood was discovered, did believe that the child received its nourishment from the mouth, and that the water contained within the membranes was the matter of its food: but modern discoveries of anatomists, and a better philosophy, have long since exploded that notion.

MIDW. Well, Sir, if this be the case then, I can easily conceive why it is so absolutely necessary that a woman should be delivered forthwith, when the symptoms of a miscarriage appear.

DOCT. Ay, Sophia, it is certainly so; and I must admonish you well to weigh this circumstance, as a thing of much greater

greater moment than most midwives are aware of.

MIDW. Hereafter, Sir, I shall. But if it be true that the child neither eats nor drinks of itself, what does that black excrement proceed from, which the child is observed to void soon after it is born?

DOCT. You ask a question, Sophia, which has occasioned a great deal of debate among the learned; and the ancients in general, from an observation of this excrement, concluded, that the child must receive food at the mouth. But for my part, I cannot help thinking it to be that, which we commonly call Slabber in children newly born; which, without doubt is discharged from the gland, which anatomists call Thymus, even while the child is in the womb, and slips down into the stomach and guts, and is there concocted

(meeting with a portion of gall) by the heat of the body into a thick and hardish substance, of the consistence you find it when the child is born *. For it would be absurd to suppose, that the quantity of excrement which the child voids soon after it is born, is all that has been made from the first moment it began to exist in the mother's womb. And, if the child did continually receive food at the mouth, there would be a continual, and proportionable encrease of the excrement. But Providence seems to have contrived wisely to answer this end another way; that is, by conveying nourishment to the child by means of a circulation of blood from the mother to it. And the wisdom of Providence in this contrivance appears very eminently, that

* I cannot agree with Dr. Bellenger that this flabber is the food of the infant, because a very great quantity is secreted for some years after the child is born.

neither

neither the child, nor the mother, suffers those inconveniencies that might arise from its receiving food at the mouth: that is, the child is not subject, while in the womb, to such diseases, which proceeding from gross humours, occasioned by bad food, or what we call a Dyscrasy, may increase the bulk of the body, and occasion much pain and difficulty, both to the mother and it. Such diseases are a dropsical liver, and other swellings of the abdomen (or lower belly), and the like, which frequently happen to children after they are born.

MIDW. You have greatly satisfied me, Sir, in this point, to which I was an utter stranger before; and I am already amply persuaded, how infinitely greater advantage I shall receive from your lectures, than I possibly could from the instructions of any, even the best, of my own sex.

Doct. Why, truly, Sophia, these are not only truths, but necessary ones, and such as ought indispensably to be known by one who would practise your art: and though the rules I propose to give you will be very short and concise, yet they will be fundamental ones, and such as will furnish your mind with a solid theory of midwifery; which, when confirmed to you by a series of practice, will enable you to go about your business with courage, and a conscious satisfaction.

MIDW. Yes, Sir; that I am persuaded it will: for I think, that the very next time I am called to assist a labouring woman, I shall not be so timorous as I have been.

Doct. O but Sophia, have a care that the new courage you seem to boast of does not display itself in down-right rashness.

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You will, notwithstanding I have prepared your mind with part of a safe, and wholesome theory of the art, find yourself more or less at a loss, when you are precipitated on a sudden into an occasion of practice. Use will, in due time, make you perfect, and be sure that to your courage you always join caution, thought, and discretion.

MIDW. Sir, I am infinitely obliged to thank you, and shall use my best endeavours to follow this, as well as every other, part of your advice. But, pray Sir, before you proceed to give me a description of any other parts of the body, give me leave to ask you, what is the reason of the falling down of the womb in some women that have borne children!

DOCT. That question, Sophia, is very opportunely asked; because it reminds me of a deficiency I was guilty of, in not

giving you a full account of the womb. Be advised then, that the womb has two strong ligaments on each side, by which it is tied to each side of the body, to keep it in a proper and even position. Now, when these ligaments happen, by some violence (as very often, from a rash midwife's pulling the navel-string too hastily) to be stretched too far, so that they are not able to contract themselves, as in a natural state of them they will do, the womb (which is of a thick substance, and of some weight) will fall through, or into, the vagina; nay, sometimes, be turned inside [out; as I lately found it in the case of an | unhappy woman, to whose assistance I was called, after a young and unexperienced midwife had, in this barbarous manner, [delivered her of a dead child.

MIDW. But pray, Sir, if I am not too impertinent, of what thicknefs is the womb when the woman has gone her full time ?

DOCT. Why, about this, Sophia, authors do not seem to agree. But if I may speak from my own experience, I lately opened a woman, in the presence of several gentlemen, who was, I believe, within an hour of her labour, and had poisoned herself; in whom I found it to be about the eighth part of an inch thick, as near as we could guess. But I do not know for certain, whether it be so in all bodies. But this is not of very great moment to you. It is capable of being torn by rashness, and extreme violence: therefore beware of being presumptuous, or over-hasty.

MIDW. Well, Sir, now I presume you think it proper to give me some account of

the bones, which make what I think you called the Pelvis.

DOCT. Yes, Sophia, but the pelvis is of so odd a figure, that I cannot undertake by words to give you any tolerable satisfactory description of it; but, if you will walk with me into my study, I have a female skeleton there, and will give you an ocular view of it; from whence you may have a better and much truer idea of it than words are capable of expressing. I hope you are not afraid (as many women are) of seeing a set of bones?

MIDW. No, Sir; I will walk in with you, with all my heart.

DOCT. Come then, and you shall see it.

[Here the Midwife is supposed to follow the Doctor into his study; and while she staid there,

there, to have taken a satisfactory view of the bones of the pelvis.

MIDW. Well, Sir, I think, I have a perfect notion of it.

DOCT. Why, Sophia, without a true idea of this, I cannot, for my life, conceive, how you could form any tolerable judgment of the posture of the child when in the womb : and, I dare to affirm, that your most experienced midwives, who had neither seen the body of a woman with child opened, nor an human skeleton, would be as much surpris'd at a dissection of these parts as the youngest of them all.

MIDW. Well, Sir, now concerning *touching* a woman, if you please?

DOCT.

DOCT. I presume, you are not unacquainted with the general method of doing this ?

MIDW. Your better instructions, Sir, will be very grateful.

DOCT. There is nothing more in it, Sophia, than this : you are to pass the two first fingers of either hand (first anointed with oil, butter, or some smooth ointment for that purpose) up to the vagina (or passage into the womb) till you find the mouth of the womb (which I have told you before how to distinguish.)

MIDW. Well, Sir ; now, if you please, proceed to tell me, how, from touching a woman, I shall learn the several particulars you mentioned some time ago ?

Doct. I will, Sophia, and first you shall know if the labour be at hand thus : by passing your fingers as before directed you will find (if the woman's labour is at hand) that the mouth of the womb is very thin, wide, and open, so indeed, as to let a part of the membranes through it. But, in order to make yourself more sure, and better versed in this particular, you should often touch your patients from the time of their first conception, to the very last week, nay day of their account. And then you must not too certainly depend on this rule neither, because you will find, that the mouth of the womb is not, at the same time, equally open in all women. It is indeed, commonly so with young and tender bodies, that have been brought up in a more easy way, under the smiles of Fortune, and unaccustomed to labour. But it is often otherwise with those who have married

ried in advanced age, or who are of a strong and hardy constitution, and used to labour ; and so it is with those in whom the infant is ill-placed. Therefore you must make this experiment with the utmost care and circumspection.

MIDW. Well, Sir ; and how must I assure myself, whether the pains the woman complains of be the true or the false ones ? for this I take to be a very necessary article.

DOCT. True, Sophia, it is ; and the poor woman that happens to fall into the hands of rash and ignorant midwives, may suffer very greatly, from a mismanagement in this case. But, before I tell you how you may satisfy yourself in this particular, by manual means (that is, by touching), it will be necessary to enumerate to you, also, the other symptoms which occur to the understand-
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ing from the complaints of the patient herself. Know then, Sophia, that it behoves you, very cautiously, to observe what you can in this case; and more especially, when the woman you attend is one of those who never yet brought forth a child: for these, for want of a little experience, are very apt to mistake their case, and to think their labour coming on, if they happen but to be seized with some pains about the loins, or the lower part of the body: and, on that account, become impatient to be delivered: so that easy, or ignorant midwives are, indeed, too often drawn, by the impatience, or importunities of the woman, to administer forcing medicines, or to put the patient upon using methods, commonly reckoned to contribute towards delivery; such as walking to and fro, and the like; insomuch, that the poor creature is miserably cruciated, brought into a low, and languid condition, and, perhaps, at last, mis-

miscarries. Now if, Sophia, you would act prudently, and with safety in this case, you must diligently, and sagaciously, distinguish between the pains which ensue from the cholic, and those which are the immediate harbingers of labour. And these cholic pains are of two sorts; the one proceeding from a diarrhœa (or looseness), the other from wind in the bowels. The first is occasioned by a sharp humour, which corrodes the bowels, and causes a painful griping; whereas, in the other, the patient is generally costive, and uneasy for want of a stool.

Sometimes these pains happen alone, and sometimes they are mixed with the true ones. But, if the pains be genuine, or true, the following symptoms will be observable; *viz.* the belly of the pregnant woman will be something extenuated, especially the upper part of it, if the infant be well situated:

ated: and indeed, then you may promise yourself both a speedy and an happy delivery. For this cannot happen when the infant is ill seated, and the labour of consequence likely to be hard, and difficult. Neither when this symptom happens, must the patient be uneasy, and you discouraged, if she finds that she is oppressed, either in going to stool, or making water; because, this is only submitting to the least of two unavoidable inconveniences. But, on the contrary, you may boldly excite her to patience, by a promise, that she will speedily be delivered from both.

MIDW. But pray, Sir, why is this inconvenience you speak of unavoidable?

DOCT. You may remember, Sophia, that I told you a while ago, when I was describing the womb to you, that it (that is, the womb) is seated between the bladder

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der and the strait gut, and as the urine flows from one, and the excrement is discharged by the other, the head of the infant being, at this juncture, fallen down into the pelvis, presses hard upon both the bladder and the strait gut, and in a good measure, hinders them from doing their office.

MIDW. Well, Sir, this you have made very plain to me: now, if you please, the other symptoms.

DOCT. If the pains be of the right sort, Sophia, the woman will feel some unusual pains of the loins continually encreasing, and, as you midwives call it, bearing down, till at length, a slippery water shows itself. And now, the very instant of delivery approaching, your woman will be seized with the sharpest and most severe pains about the loins, the hips, and the navel; which
pains

pains will be of a forcing nature, and tending towards the womb and the outward parts : but these pains will not be continual, but alternate ; that is, on and off : and now will be your time to satisfy yourself fully, by touching the woman ; for you will know them from the false ones, by this, that you will find the mouth of the womb, while these assault her, to widen ; so that waiting for the moment that these invade her, you must pass your fingers, and you will, by that means, be able exactly to inform yourself, whether they are the true pains, or the spurious, or false ones. Because, if they are the false ones, at the time they invade the woman, the mouth of the womb will be more closely shut, and after they are over, will be open. Moreover, Sophia, by laying your fingers on the woman's pulse, you will find, that that will be quicker ; and, if you look in her face, you will perceive that to be flushed : and
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this flushing is generally followed by a concussion, and a trembling of the whole body; especially of the lower limbs, as though she was seized with a fever, but with this difference, that she is not sensible of any coldness. Some are apt, at this juncture, to vomit; others not, but the case with most is attended with a flowing of a thickish, slippery water; which, if it begins to redden, or appear bloody, is a certain sign of an instantaneous, or speedy labour.

These, Sophia, are the common symptoms, and this the common method, by which you should inform yourself, how things stand with the woman you are to assist. But, as there is no rule without an exception, so this must not too strictly be observed: for, as Daventer justly remarks, there are some women in the world, who are so advantageously made by Providence for this purpose, as to bring forth their
children

children without any sense of pain : which, indeed, may very easily happen, when the pelvis is very wide (as in some women it is) and the child well seated, and not too large. For which reason, the same Daventer observes, that a midwife should not think herself obliged to wait the assault of the strong, and depressing pains, before she touches the woman. To confirm which opinion, he mentions the instance of two women, who were each of them, in an instant, brought to bed without any previous symptoms, or customary pains. And it is but very lately, that I met with an occurrence in my own practice, which not only confirms to me the opinion of Daventer, as to the matter of fact, but also serves with me, instead of another reason, why you should not wait the invasion of the extreme pains, before you make the trial of touching. I will relate the case to you, Sophia, for your farther satisfaction in this
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particular. It is this: I was called in by a midwife to assist her in the following case: a woman had gone her full time, and was seized with some pains, which she judged to be the true ones; whereupon she sent for her midwife, who, when she came, was something in doubt, whether they were the true pains or not; being but very slight ones, in comparison of those which commonly do immediately precede a real labour; and on this account, encouraged the patient to wait the efforts of nature: which she did (but fruitlessly) for more than a whole day. The patient finding herself very uneasy, notwithstanding her pains were very light ones, concluded, that the midwife had mistook her case, that she wanted judgment at least, and pressed her to attempt delivery. The midwife (who was a young beginner and somewhat timorous withal), passed her hand, and found the waters with the membranes forced quite through the vagina, but

but not broke, and the child in an unnatural posture ; but would not venture to deliver the woman : wherefore she advis'd her to send out for better help. Pursuant to her advice, I was sent for ; and upon diligent examination, found the case thus ; the membranes, with the water, had descended through the pelvis quite to the outer orifice of the vagina, the upper part of her belly was considerably lessen'd, but the woman had no very strong pains, nor indeed, any but what were momentary, yet express'd a deal of anxiety, and pray'd for God's-sake, to be delivered. I was willing to contribute what I could to make her easy, and therefore ordered every thing to be got in readiness ; all which was, indeed, sooner done, than I either expected, or desir'd. Whereupon, I was precipitated into an actual design of proceeding to delivery, if the case would possibly admit of it ; believing at the same time, that I should be obliged,

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from the nature of the case, to put the woman off with some plausible excuse. But it happen'd quite otherwise ; for, upon passing my hand up the vagina, and quite through the pelvis, (which was a very wide one) the membranes, without breaking, allow'd my fingers to distinguish the child to lie in an ill posture, *viz.* The head of it was fallen very low to the right side, against the os ilium, and the legs were elevated very high on the other side : the membranes also were very strong and thick, and the mouth of the womb sufficiently dilated, (or widened.) Having discover'd thus much by manual means, of touching, I judg'd it both reasonable and safe to break the membranes with my fingers and deliver the woman ; which I did, and without any difficulty brought the head of the infant into the vagina, so as to leave it easily in the power of the midwife (to whom I gave leave to resume her place) to deliver the woman, whom accordingly she

she did of a living child. Now I mention this instance, Sophia to show you the necessity of making your trial by touching, very early. For had either the midwife or I waited the assault of the very strong pains, the woman or the child, or both might have been lost; whereas, by this means, both were sav'd.

MIDW. Well, Sir, this is a very necessary and useful piece of advice, and what I shall in the course of my practice, strictly observe. But if you remember, you was saying just now, that sometimes, true and false pains met together in the same person. Pray, how must I be able to discern this to be the case, and when it is found to be it, how am I to proceed.

DOCT. Why, I'll tell you, Sophia, when the true and false pains jointly concur, the labouring woman will find, that when her pains seem to bear down the birth, and she

herself joins her utmost efforts to them, those pains, are suddenly chang'd into a sort of cramp; so that she cannot possibly get rid of her burthen: and when the case is thus, you will easily know, that there's a mixture of the false and true pains, by passing your hand, or touching: for your fingers will satisfy you, that the pains do indeed, at first enlarge the orifice of the womb; but if the woman uses her utmost endeavours with them, those pains suddenly cease; nor can you expect a successful labour, unless you first attempt to remove those pains, or to cease them at least, by some proper medicine.

MIDW. Ay, but Sir, how shall I, being but a weak woman, know how to give remedies?

DOCT. Why, Sophia, this is not properly your business. When you find the case thus, you should apply to some skilful apothecary.

apothecary, or to some man who practises midwifery, for a remedy proper to be administered on this occasion.

MIDW. O, but Sir, that's the way to get discredit, and to have the world say of me, I was forc'd to fly for refuge, to some better help. Our old and experienc'd midwives, all of them, have their medicines by 'em to give upon this, or any other occasion.

DOCT. Why yes, Sophia, I know they are most of them daring enough, and while they are thus feeding their unsufferable ambition, by acting out of their proper sphere, and usurping an office not their own, they are offering violence to the health of their fellow-creatures, tempting Providence, and bringing down upon their own heads, the displeasure, (not to say the vengeance) of the righteous Heaven. And if you will ob-

serve the discourse of the generality of them, you will find, that they value themselves more upon their secrets in medicine (as they vainly call them) than upon their knowledge in the art of delivering well, which is their true and proper province. No, Sophia, don't be over-fond of acting the physician, lest while you are aspiring beyond the capacity of a woman, you fall, to your eternal shame and discredit, beneath the just, and severest censure of men, and expose yourself to the reproach and contempt of the wiser part of your own sex.

MIDW. But, Sir, we are often called into the country, and to places remote from any such help as must come directly from an apothecary's shop, and perhaps to people too, who are poor and cannot afford to send for better advice. What! must these people be lost for want of our know-
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ing a little, what is necessary on such an emergent occasion?

DOCT. Don't mistake me, Sophia, I am not excluding you from all knowledge of that sort. I mean by what I have said to you upon that head, nothing more, than to check the exorbitant pride of the generality of the profession, who, by their daring insolence, and, perhaps, still greater ignorance, are daily making poor unhappy women, the sad and wretched victims of their folly and stupidity. The reasons which you urge, are good, and founded upon the principles of humanity. Know then Sophia, that to answer the purpose of removing the spurious or false pains, which retard the delivery of a woman, it may be necessary for you to keep by you, and to carry with you into the country, some good and safe opiate, such as the solid or the liquid Laudanum; a proper dose of relief

of which, you may administer to the patient, and in case you fail of relief from it, after it has been taken about an hour, you may venture to give a second, and from that may reasonably, and commonly, without disappointment, expect that the false pains will vanish, the true ones succeed them, and the woman, with the genuine ones, be able to discharge her load. The quantity that may be given of liquid Laudanum (rightly prepar'd) are 25 or 30 drops, or more, if the patient has been us'd to take it; of the solid sort, a grain and half, or two grains, as use and the constitution may require. But because medicines of this tribe, do not operate in the same quantity, equally alike with all people, so I must conjure you, Sophia, as you tender the life of a fellow-creature, and will answer it to God and your own conscience, that you act with the utmost circumspection in this affair; and that you never take upon you
to

to prescribe, when time, place, and the circumstances of the patient, will admit of the advice of those, whose proper business it is to know the nature of medicines, and to administer them.

MIDW. I shall observe you, Sir.

DOCT. Now, then I will proceed to tell you how you shall know by touching, whether the labour will be easy or difficult. When, therefore, Sophia, you are call'd to a woman's labour, get leave to touch her; and if you find, that the lower part of the womb, with the head of the infant, is slid into the pelvis so that you can easily touch it, just at the entrance of the vagina and find that there's no necessity to pass your fingers any farther into the body, you may reasonably hope for an easy and successful labour.

THE same may by your confidence, when you find the mouth of the womb to be thin, soft, and widely expanded, and you can learn, by the wedth of the mouth of the womb, that the infant presents itself rightly with its head forward, and neither an arm nor the navel-string intervenes.

BUT you may be assur'd the labour will be difficult, when by touching you find that the mouth of the womb lies high, is little, or not at all open, is sharp, thick, hard, or the waters with the membranes are forc'd out to a considerable length, and confin'd into a narrow compass; and then you are to be upon your guard, as being justly apprehensive of a troublesome and difficult undertaking. Nor must you by any means, leave the woman, if you have either her safety, or your own credit at heart.

AND now Sophia, I will inform you, how far touching will be of further service

vice to you, in making you able to judge, whether the child in the womb be well or ill-seated for delivery. And, that you may the more advantageously make this trial, I must advise you to remember, that in a natural state, the child sits in the womb with its chin inclining towards the breast, its hands resting upon its knees (which are drawn up) and its forehead upon its hands; so that, if no untimely accident befall it, before the time of exclusion, the crown of the head will, naturally, in time of labour, fall into, or directly against the mouth of the womb; and as it sits with its face next the mother's navel, so it will of course, fall into the vagina, with its nose towards the mother's back.

HERE, Sophia, see and admire the wisdom of divine Providence, and his tender care of his rebellious subject Man! What a contrivance is here for the defense of the

infant, while in its *CLAUSTRUM* and for its safe and easier exit into the world of beings! Its face is determin'd towards the softer part of the mother's body, that it might not be subject to every little shock and accident, which her weakness, or indiscretion might expose it to; whereas the contrary position of it, would render it obnoxious to a thousand injuries, upon the slightest and most inconsiderable occasions! The bones of the infant's forehead, would frequently dash against the back-bone of the mother, and the nose be crush'd into a variety of forms; the chin would be bruise'd and the jaw-bone dislocated, and perhaps fractur'd; and the infant thus mangled, be born into the world, not what the half-spent mother expected it, *her Joy and Comfort*, but her *Terrour and Astonishment*! Think with yourself, how piteous her case must be, when, after having undergone the bitter pangs of, perhaps, a tedious

and

and difficult labour, in which the springs of life have been almost rent afunder; her hopes, which were her support in the time of suffering, are blasted, and chang'd into an inconsolable sorrow! — But here, I digress, Sophia.

MIDW. Sir, you are very good, and need not excuse yourself.

DOCT. Well, I will proceed: You must satisfy yourself, whether the posture of the child be a good or bad one, by passing two of your fingers up the vagina, till you meet with that part of the child, which presents itself against the mouth of the womb. If it happens to be the head, you will easily apprehend that the posture of the child is not a bad one; especially if with one of your fingers you can find, that the face of the infant points against the mother's back. But if, on the other hand, you should find
any

any other part offer itself first, you may assure yourself the labour will be more or less difficult, according to the make and figure of the part which you discover to present itself. Thus comparatively: The posture is better when both feet come first, than when only one does, and even this has its distinction of better and worse; for if the toes of the infant do not turn towards the mother's back, there will be a necessity of turning it till they do, which will still protract the labour, and cost the mother more pain; whereas, if the toes point the other way, you have nothing more to do, but carefully to draw the child away by its feet.

It is quite otherwise with respect to the other two postures, in which the child comes with its hands, or arms first; it being better that only one arm should offer first, than that both should: For, since in
 either

either case, it is most commodious to turn the child, and bring it away by the feet; the operation will most easily be performed, when only one arm presents; because in that posture, the legs (which are in either case to be fought for) will be most readily come at; since that posture will of necessity bring 'em as low, as the form and capacity of the pelvis will admit of; whereas, in the other case, the feet, (from the very nature of the position of the child) will lie directly upright and very high, and, with much more difficulty, be brought down.

So again, with respect to those postures, in which the child presents with the head: It is better that it should offer with the chin sticking against the os pubis, than with the face upwards, that is, with the hinder part of the head, next the back of the mother. Because, by passing your hand
against

against the breast of the child, you easily disengage the chin, and the infant will fall against your hand, into its natural posture for delivery, that is, with its face against the mother's back, and so your work will be easy; whereas, in the other case you must either be at the trouble of turning the child, or hazard the deforming or spoiling of its nose.

By these two or three instances, Sophia, you may, with a little thought and mature reflection, be able, by comparing them, not only to judge which are the very best, or very worst postures of the infant, but also which are, in the comparative degree, better or worse, one than the other. And a little sagacity, joined to the information which touching will afford to your senses, will make you pretty perfect in this particular of your calling.

MIDW.

MIDW. But, Sir, can I distinguish the part of the child which offers, from any other part, before the waters are broke ?

DOCT. To be sure not so easily before they are broke as after, Sophia ; nor, indeed, in some women so easily as in others : Because, both the waters are more in quantity, and the membranes thicker in some women, than in others. Nevertheless, as this is very often possible, nay, and even easily, to be done ; and as very great advantages may arise from the doing of it, both to the patient and the midwife, you must always reckon it your duty, at least, to attempt it. How else will you be able to know how to assist the poor woman, when the case is such, that there is a necessity (which often happens) of breaking the membranes, in order to save both the woman and the child ?

THIS

THIS experiment will indeed, always be attended with one difficulty; especially to a midwife of less experience, or to one who has never practised touching at all; that even when the parts are actually to be felt, the midwife will be apt to mistake one for another. Thus the cubit (or bending of the arm) will, without a good deal of sagacity, be mistaken for the knee, the knee for the cubit, the feet for hands, and the hands for [them], the head for the nates, and the nates for the head. But if there were no other advantage arising from this practice of touching than this, that in general at least, the senses may be inform'd, whether the posture be natural or unnatural, it ought not to be neglected, or look'd upon as a trivial, and unnecessary circumstance.

MIDW. Sir, you have sufficiently convinc'd me, that it is a matter of the greatest moment,

moment, and though I never knew before, that it was either necessary or useful, I shall hereafter, make it my care to put it often into practice.

Doct. You will not repent that resolution, Sophia.

Midw. Well Sir, how must I then inform myself, whether the birth should be promoted before the usual time of delivery?

Doct. Why, that you, shall know, Sophia, in a very few words : For I must premise to you, that there is but one case, in which it can be justifiable to deliver a woman before the wonted time ; and that is the case of abortion (or miscarriage) : when the signs of which, do manifestly appear, the delivery of the woman cannot be delayed, without the utmost hazard of the life of both the mother and the child.

Midw.

MIDW. Pray, Sir, what are the certain signs of an impending miscarriage.

DOCT. You may know an impending miscarriage, Sophia, by a premature (or untimely) flux of blood, suddenly coming on the patient, and rushing forth with violence, and in a large quantity, without any intermission, so as greatly to impair her strength; and accompanied with faintings, convulsions, and cramps. Take notice, here, that I say, this flux of blood, is sudden, violent, large in quantity, and without intermission, with convulsions, and symptoms of the same kind: Because I am now speaking of such a miscarriage, as without a speedy delivery of the woman, will inevitably destroy both the mother and the child. Because, there are ordinary and lesser miscarriages, which the physician's art or medicines, timely and judiciously applied, may prevent; and these
are

are known, by the lenity or mildness of the symptoms; which differ in little else from those of the more dangerous sort, than that after some few hours, or days at least, if proper medicines have been duly and judiciously applied, they abate, either wholly, or in part.

Now to satisfy yourself fully, in this affair, you must pass your fingers, as before directed, and you will find, if the miscarriage be of the worst sort, the mouth of the womb to be somewhat open; and (perhaps) may even feel the after-birth, which in this case, is always separated, either wholly, or in part, from the bottom of the womb, to which (whilst all things went well with the woman) it was fastened. I say, when the case is thus, you must declare to the standers-by, that the woman must be forthwith deliver'd, if they desire either her's or the infant's life. And this, without any regard

regard to the time the woman has gone, or to the age or size of the infant. How you are to proceed in case you are obliged yourself, to attempt the delivery of the woman, I will inform you by and by ; because, in giving instructions, there is a necessity of observing, and keeping to, a certain method ; and this I would do all along, throughout the whole of our conversation, if I could.

MIDW. Very right, Sir. Then, by this time, I presume, I may venture to remind you of advising me, how to know by touching whether the infant be alive or dead, while in its prison ?

DOCT. Ay Sophia, I will advise you as well in this particular as I, or perhaps any body else, can ; but must premise to you, that this is a very nice and critical point, in which it behoves you to act, with the utmost deliberation and circumspection.

Above

Above all things, let it be your care, that you are not deceived (as midwives, who are rash and thoughtless, often are) by the report of the mother, who often thinks the child is dead, because she has not felt it stir for some time. Thus much, however, the touch will inform you, if, by passing your hand, you can find the navel-string, and along it can get your fingers very near the navel itself, you may be able to perceive, whether there is any pulse, or beating in the navel-string: for if you find, that it has lost its pulse, and is become small and flabby, and has not the least resistance, when you press it between your fingers; if you can feel no beating of the heart between the ribs, if you can come at the head, and find the scalp (or skin of it) rotten, and for that reason to crumble between your fingers, and distinguish an offensive, putrefactive smell: I say, if the nature of the case will permit you, by touching, certainly to inform yourself of all these particulars;

culars; you may pretty safely conclude, that the child is dead. But the best practitioners, and safest writers, upon the subject, are of opinion, that without the last of these circumstances, that is, without the child's head is corrupted whence will also naturally follow a putrefactive smell, and a dissolution of the bones of the infant's head) the other signs are not to be depended on.

Thus, Sophia, you see how necessary a part of your art this article of touching is; and what fatal mistakes it may prevent a midwife's making, who will carefully study it, and put it into constant practice. And I hope, that these instructions concerning it which I have been giving you, though very brief ones, will prove, in the course of your future practice, of no small service to you. These, I think, are all the particulars of moment, which by this means you are to inform yourself about; though there are some other,

other, which are so very obvious, that I need but barely mention them to you: as for instance, the falling down of the womb, the straitness of the passage into the pelvis, or any swellings or ulcers within the vagina; each of which contribute to make the labour difficult. But as these things fall properly under the care of the surgeon, you have nothing to do, when you find the case such, but to recommend your patient to him, or at least to advise with him, how you should proceed; and it is upon this account too, as well as for reasons I gave you before, that you should make your trials by touching, early. I shall now pass on to tell you, how the navel-string should be tied, and after the birth be safely drawn away.

MIDW. Sir, you are too condescending now. I have long trespass'd upon your good-nature, to get information about things of

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confe-

consequence; I humbly apprehend I am sufficiently well versed in the way of doing that.

DOCT. Perhaps you may, Sophia; but you must pardon me, if I should a little distrust you in this particular: because I have, more than once, met with those of your profession, who have been longer at the business than you, who notwithstanding their very great confidence, have made some very fatal mistakes in this part of their work.

MIDW. Sir, I beg pardon, and shall thankfully hear, whatever you shall be so good as to observe to me, and lay it up in my mind too.

DOCT. Pray then, tell me how you perform this, that I may be the better judge, whether any farther advice about it be necessary or not.

MIDW.

MIDW. Why Sir, after I have got the child into my lap, with the fingers of my left hand, I take hold of the navel-string, and twist it twice or thrice about them, and sliding my other up as far as I well can, I lay hold of the string, and pull it away.

DOCT. Well, and do you pass your hand, for this purpose, quit into the womb?

MIDW. Oh! no Sir, by no means.

DOCT. Why Sophia.

MIDW. For fear of hurting the woman, Sir.

DOCT. Poh! That is a groundless fear; you cannot hurt the woman by passing your hand into the womb; nay, I will venture to say, that you cannot deliver

the woman, with any certain safety, unless you do it: for, if the after-birth sticks very fast, as very often it does, you will find, that unless you pass your hand, and with your fingers, separate the part that adheres to the womb, you will, by using violence, run the hazard of perverting, or turning the womb inside outwards; which is frequently the case with rash and ignorant midwives.

MIDW. Well, but Sir, if I do this, I must be obliged immediately to commit the child to some other woman in the room, and that is not a customary thing with us midwives.

DOCT. True, Sophia, neither is it customary, with the generality of midwives, to practise means that are consistent with reason and the nature of things: they, will sometimes sacrifice the life of an infant,

fant, and the welfare of the mother, to humour and an idle custom. Custom is a tyrant; it has an arbitrary sway, and has done as much mischief in the world, in one sense, as any of the Roman emperors has in another. I tell you, Sophia (and desire you will carefully remark it too) that you must, when you have got the child away, have tied the navel-string and cut it, and have twisted it about the fingers of your left hand, pass your right hand up by the side of the navel-string, till you come at the placenta, (or after birth) and, if you find it adhere to the womb, must, with your fingers, endeavour to release it; at the same time gently drawing with your left hand, till you find that it follows your hand; and that for these two important reasons; first, because there is danger of the string's breaking, when held at so great a distance, and then, because there is equal danger of tearing the ligaments

of the womb, or pulling it down into or through the vagina. Besides, you have, by this means, an opportunity of satisfying yourself, whether any part of the placenta is left behind; and, if it is, of removing it; whether also, there is not another child remaining, and, if there is, of fetching it away. But you must remember, that this must be done immediately, as soon as the child is taken away; because the mouth of the womb then begins to close, and you will find it difficult, if not impracticable, to pass your hand, if you are not very expeditious in doing it. But pray at what distance do you commonly tie the navel-string?

MIDW. O Sir, about a hand's-breadth from the child's body.

DOCT. You err Sophia, in that; and so do those who tie it very close to the child's body. The first practice is attended with
this

this inconveniency, that it sometimes exposes the child to a navel rupture; the other suffers the navel-string to slip and so may occasion, either a bleeding, with some still worse symptoms, or a contraction of the navel-string. If then, you would do it judiciously, you should, with several threads waxed together, make two ligatures, (or knots,) the one about two fingers breadth from the child's body, and the other about the same, or indeed any greater distance from that; and then cut off the remainder of the string, just beyond the second or outer knot. Your making a double ligature, is attended with this advantage, that if you should find the remainder of the navel-string to huff up, as sometimes it does, then you may untie the first ligature, and by that means, give the included air more space, and sliding a fresh ligature from the child's body towards the same place, tie it again; then the air that

was between the first ligature and the child's body, will be between the outer ligature and that, and may either be kept there, or let out.

MIDW. I understand you, Sir. But pray inform me, what I must do when the womb of a woman with child is fallen down; for this I suppose must hinder, or render her labour difficult?

DOCT. Why yes; you cannot conveniently deliver the woman, while things are thus; therefore, you must, in time have recourse, if the case be bad, to a pessary; which, being carefully convey'd up the vagina, will keep the womb from falling any lower, even in the midst of the woman's throws; and will facilitate the opening of the mouth of the womb?

MIDW. You have of the pessaries by you, I presume, Sir?

DOCT.

DOCT. Yes, I have of all sorts ; and if you'll walk again into my office, I'll show you 'em.

Here the Midwife is supposed to attend the Doctor into his office, to have a satisfactory view of them, and to be instructed in the way of making them.

MIDW. Well, Sir, I can carry their shape and size in my memory ; but pray, which way am I to use them.

DOCT. First of all, Sophia, you must thrust up the prolapsed womb, by means of your hand ; then you must presently, and dextrously, convey the pessary in such a manner, that the hole of the pessary, may correspond to the mouth of the womb. This, I say, must be done in time, and not deferred till the woman's pains are already come upon her ; for then you would find it, not

only difficult, but perhaps, impracticable to do, what otherwise might be done, with the utmost ease. And now I am speaking of this impediment, which arises from a disease of the womb itself, it comes into my memory to advertise you of another hindrance you will sometimes meet with, when you are about to do your office.

MIDW. What is that, pray Sir?

DOCT. Why, you know, when I took you into my office to show you the form of the pelvis, among other things you saw a little bone, which I told you, was call'd the os coccygis.

MIDW. You did, Sir, and I well remember its form.

DOCT. Why, that trifling bone, Sophia, will sometimes give you more trouble, than you may be aware of.

MIDW.

MIDW. Pray inform me how Sir ?

DOCT. I'll tell you ; this bone, as small as it is, has a greater elastic force than perhaps you may imagine : you may observe it turns inwards, toward the woman's navel ; and if you remember, I told you the strait gut passes quit along it. Now, when this inclines very much inwards, as in those persons whose pelvis is ill-made, it must necessarily tend to straiten the passage, and must push the child too much forwards ; so that you will find it necessary, in order to make the exit of the child more easy, to press back this little bone, which indeed will sometimes require not a finger only, but the force of your whole hand. Moreover, you will find, that sometimes the strait gut, by being charg'd with hardened excrement, will retard, and obstruct the birth of the infant : the way to remedy which, is to administer

a clyster, (which must be repeated, if there be occasion) and this must then more especially be done, when any inflammation, or sore, affects the gut.

MIDW. I remember, Sir, that a little while ago, you was hinting, that there was a necessity sometimes of breaking the membranes to facilitate the birth.

DOCT. Right, Sophia, I did; and now I'll tell you: the seasonable time to do this is, when you find (which you may distinguish by touching) that the mouth of the womb is sufficiently dilated, and the waters have thrust the membranes thro' it, so that they expand themselves into a very wide space; that the woman has undergone some fruitless pains; some part of the child, or perhaps the navel-string presenting itself. I say, when by such as these, and the like signs, you are fully
satisfied

satisfied, that nothing but the firmness of the membranes hinders the birth of the infant; then it behoves you, with your fingers ends to break them, at the same time continuing your hand up to the infant, that it may receive it, lest the efflux of the waters should cause any part of the child, especially the head or face, to dash against the bones of the pelvis, and become thereby injuriously bruised.

IF, the waters having very suddenly flowed, and the delivery not directly succeeding, you should find the passage somewhat dry, you must draw away your hand, and anoint the parts with some oil, or other smooth, and lubricating substance, that the infant may not stick in its passage through the vagina.

MIDW. Pray, Sir, does it never happen, that the after-birth gets loose before its
time,

time, and slips before the child, so as to hinder its being born?

DOCT. Yes, Sophia, it does sometimes.

MIDW. Pray, what must be done in that case Sir?

DOCT. Why first of all, you must take care to satisfy yourself, that it is really the placenta that offers: this you may do, by passing two fingers into the womb; and if it be truly the placenta, and not the head of the child, you will distinguish a thick, softish substance, like flesh; differing from that of the infant in this, that upon pressing it very hard, you can feel no bones, and then it is of a looser texture too, than the flesh of the infant, and shapeless. And this is further to be remarked, that the case is always attended
with

with a flux of blood; which is some times so violent, as to endanger both the mother's and the infant's life. Now, when you find this to be the case, Sophia, you must, without any delay, attempt the delivery of the woman, thus: pass your two first fingers into the womb, and try first, if with them you can remove the placenta to one side of the womb: if this cannot be done, so that you may come at, and break the membranes with your fingers, thrust your fingers into the substance of the placenta itself, and agitate them so, as to tear the placenta, till your fingers have got quite through it, and immediately will follow, instead of blood, the waters themselves: or, if blood does continue to flow, it will be but in a small quantity; for it will now begin to cease, either wholly, or in part. Then search for the infant's feet, and draw it away in the manner I shall by and by direct

rect you, when I come to talk with you about the method of turning, and fetching the child away.

MIDW. I thank you, Sir: but I am a little uneasy to think, that if I have given you all this trouble only to bring me, as it were, just within the porch of instruction, with what face shall I presume on your farther patience, to carry me into the fabrick itself; where, I suppose, I am to receive from you, particular instructions how to conduct myself, in each of the vast variety of postures, in which the infant may offer itself in the course of my practice?

DOCT. This need not at all discourage you, Sophia, nor need you give yourself the trouble of making any apology of this kind in relation to my patience; for, having prepared your mind with the knowledge of such things as are previously necessary

cessary

cessary to practice, I shall, in concurrence with two late authors, take the liberty to give it you as my opinion, “ That the
“ cuts which represent the different situa-
“ tions of infants in the womb, in the
“ books of Guillemau, Mauriceau, and o-
“ thers, are of very little use ; since it is
“ not by the eye, but by the touch on-
“ ly, that an artist must judge of the pos-
“ ture.” Instead therefore, of charging your memory with particular and tedious rules (as some very excellent writers indeed have done) how to proceed in each of the various postures, in which at one time or another, you may find the infant, I must advise you, to be content with a very few general and important rules, or rather aphorisms ; your duly weighing and observing which, will furnish you with such a theory of useful knowledge of your art, as will enable you, with courage and resolution (a little experience
and

and practice assisting) to go about your work, and with the concurrence of the blessing of providence, will crown your honest endeavours, with success and reputation. Take this then for the first; and remember, that I give it you (as also the second) not only upon the foundation of reason, but upon the authority of a gentleman, of large experience and practice, nay in his very words.

APHORISM one. "A child either presents
 " with its head, or it does not: if with
 " its head, notice is to be taken, whe-
 " ther the posture be perfectly natural;
 " that is, whether the face of the child
 " lies towards the os sacrum, or removed
 " from that figure, either sideways, or
 " to the os pubis; for this, according
 " to the make of the woman, (not as to
 " the figuration of the womb, but the
 " structure and conformation of the bones)
 is

“ is much to be regarded, and accordingly
 “ the child is to be returned and drawn
 “ out by the feet, or else allowed to ad-
 “ vance in the posture it lies in, and to be
 “ born with its head first.

APHORISM two. “ If the child offers any
 “ other part than the head, the hand is
 “ to be passed gently into the womb, the
 “ feet to be searched for, the child to
 “ be turned, and that way to be brought
 “ forth without any farther delay.”

EXCEPTION.

“ BUT there is one case to be excepted,
 “ that is, when the child presents the
 “ nates (or buttocks) and is advanced
 “ in that posture, even beyond the labia
 “ (or outward parts of the vagina) it is
 “ then to be extracted as it lies ;” which,
 according to Mr. Chapman, “ may be done
 “ by

“ by passing a finger or two of one hand,
 “ or if possible of both, to the groin, and
 “ thus bring the child away, rather than
 “ attempt the feet. This, however, can
 “ be done, only when the child is small,
 “ or the woman large; otherwise, the
 “ woman is to be laid on her back, with
 “ her hips raised, and her shoulders low,
 “ and then the child to be returned so, as
 “ the feet may be commanded.”

APHORISM three. The mouth of the
 womb does not always present itself in a
 direct line with the vagina, but falls,
 sometimes to the right, and sometimes to
 the left side: but the infant cannot be de-
 livered till the mouth of the womb be
 brought into its natural and proper direc-
 tion. This is done, by passing the hand
 and searching on each side of the pelvis
 for it; and when you have found it, by
 dilating (or opening) it with your fingers;
 gently

gently drawing it, till at length you have brought it into its natural state; then you may proceed, and search for the child, &c.

APHORISM four. “ The child is always
 “ to be turned, except when the head
 “ comes right, lies high, not yet out of the
 “ womb, or when low in the pelvis, pro-
 “ vided it lies so loose, as easily to be
 “ returned, and the hand readily passed. ”

APHORISM five. Women who marry not, or prove not with child, till they are somewhat advanced in years, are generally more subject to difficult labours, than those of the younger sort; and those who are deformed, can seldom expect an happy labour.

APHORISM six. “ Even if the face of
 “ the child be turned towards the os pu-
 “ bis

“bis, it is much better to turn the infant, and bring it out by its feet, than to put the labour upon the foot of nature.”

APHORISM seven. “Which way soever the face lies, if the head does not sink lower, by the force of the true, and strong pains, but hangs as it were above, and presses upon any part whatsoever, the hand should be passed, the feet sought for, and the child, by them, drawn away.”

APHORISM eight. There is no necessity of turning the child when it presents with the feet first, the toes being turned the right way, i. e. towards the mother's back; because nature has saved the artist that trouble.

APHORISM nine. A child presenting with an arm first, as far as the arm-pit, is not to be drawn by that arm in order for delivery;

livery; neither (according to the custom of ignorant midwives) is the arm to be sprinkled with cold water, or ice, in order to make the child retract it; but, on the contrary, the hand should immediately be passed along the side of the child, the feet sought for, and the infant drawn away by them.

APHORISM ten. If the navel-string happens to present first, that must be passed back by the hand, before the delivery of the woman can be safely attempted.

APHORISM eleven. If the head of the child (the waters being broke and run off) be slid into the vagina, and sticks there, the woman can seldom be reliev'd without the use of some proper instrument. And in this case speedy relief must be had, or the child will be in the utmost danger of being suffocated.

APHORISM

APHORISM twelve. When there is a possibility of conveying a fillet over the head of the infant, it may as easily and safely, be brought away by means of that, as of any other instrument; and the fillet should always be preferred, because it carries no terror with it.

APHORISM thirteen. It is an unwarrantable practice, and argues a great deal of audacity, for women, who practice midwifery, to pretend to meddle with any other instrument than the fillet; because they cannot possibly be aware of the mischiefs that may ensue to the woman, from their want of anatomical knowledge.

APHORISM fourteen. It is safer (when it can be done) to convey the fillet over the chin of the child, when it is to be drawn away by the head, and by that means to extract it; than, (as some artists do) to fix it into its mouth; since, by the former method, there

there is no danger of strangling the child, provided care be taken, that you do not let it press upon the œsophagus, (or gullet) while in the other practice, there is danger of dislocating, at least, if not of breaking, the jaw-bone. But this cannot always be done, with equal ease.

The truth of this Aphorism will appear to any impartial person, who considers how long, (without any considerable inconvenience,) children will hang in a neck-swing.

APHORISM fifteen. A midwife should endeavour to do her work, with all possible expedition, when the woman has lain for some time in labour; but must nevertheless beware, that her proceedings are not the fruits of rashness.

APHORISM sixteen. The parts which open into the womb, are more dilated than
 T ordinary,

ordinary, in and about the time of labour; but as soon as delivery is accomplished, they begin gradually to close.

HENCE the necessity of not delaying too long, the fetching away of the placenta.

APHORISM seventeen. The operation ought always to be as speedy, as is consistent with the safety of the mother and the child; but then more especially, when it is to be drawn away by the feet, lest, the parts contracting the head of the infant be severed from the body, and left behind.

APHORISM eighteen. Medicines which force delivery, should not be administered but by a midwife of good knowledge, and large experience; for the mal-administration of these, is often times the cause of bad, and difficult labours.

APHORISM nineteen. Putting a woman upon her labour too soon, is one common cause of a difficult one.

HENCE the necessity of being expert in touching, and thereby, of being able to distinguish the true, from the false pains.

APHORISM twenty. All impediments which retard delivery, must be removed, before you can expect an happy and successful labour.

APHORISM twenty-one. Where a woman labours of twins, or more than one child at once, it is reasonable to expect as many after-births as there are children. But after the first child is brought into the world, the midwife is not to wait, as before to find things upon the foot of nature; but should immediately pass her hand into the womb, and search for the other, and bring it, or them away by the feet.

APHORISM twenty-two. The hand should always be pass'd into the womb immedi-

ately after the child is born; not only for the more easy discharge of the placenta, but also, that the midwife may be satisfied, whether another child remains behind, or no. It is also adviseable, according to Daventer, to let the womb close gradually about the hand.

APHORISM twenty-three. The difference between delivering a woman of only one child, and of twins, consists in nothing more, than fetching the remaining child, or children away by the feet, after the woman has been safely deliver'd of the first.

APHORISM twenty-four. If a child presents with one leg first, that leg must be carefully put back, at least as far as the knee, into the pelvis, and then the other being sought for, and found; both must be held together, and the child turned (if the toes come the wrong way) and carefully fetch'd away.

APHO-

APHORISM twenty-five. If either the head, or any other part of the child, is confin'd in the vagina, and presses on the umbilical (or navel string), the child is, in the utmost danger of its life, unless it be speedily drawn away.

APHORISM twenty-six. All violent, or large floodings, are attended with the utmost danger, and require the assistance of the most able physician.

THUS SOPHIA, I have given you all the necessary instructions I could think of, in order to qualify you to enter upon the way of life you seem to choose. I have shewed you, what steps you ought to take, what rocks and quicksands you may avoid, if you would arrive at the shore of reputation and success. And after having furnished you with a store of knowledge, previously necessary for so good, and so great an undertaking; I have (regarding chiefly

the advantages of memory) pointed out to you, some very short, but most important, rules, which, duly weighed, and improved by a little of your own sagacity, will enable you, in process of time, to conduct yourself, with honour, and credit at least, if not always with a specious success, in every case, which can possibly be thought to come within the reach of the capacity of a woman. Whensoever therefore, you meet with any case, which comes not within the verge of the rules I have here given (for I suppose here that your own genius, assisted by the rules I have been giving you, will suggest to you a great many particulars which may be inferred;) you may assure yourself, that the assistance of a man is required, and that is therefore both your duty, and to your credit, to send out in time. But before we conclude our conversation, I have this farther to inform you of, that the greatest article of all in the art of midwifery, is that of turning the child.

MIDW. So I apprehend, Sir: and now, if you please, I shall be glad of some instructions concerning the method of doing this.

DOCT. You shall have the best I can give you Sophia; but I must premise to you, that this operation of turning the infant, is not always equally easy; but is more or less difficult; and this difficulty may arise from something that's amiss, either in the mother or the child; such as the streightness of the vagina (with respect to the mother) its being swell'd, or otherways affected; the untimely loss of the waters, which should lubricate (or render smooth) the passage; the small opening of the mouth of the womb; the ill situation of the womb itself; the narrowness or ill-make of the pelvis; the prominence (or standing-out) of the vertebræ (or back-bones) of the loins, whereby the passage of your hand is obstructed: I say, these circumstances of the mother, will

make your work of turning difficult. Then with regard to the child, the difficulty is greater or less, as the feet lie nearer or more remote from your hand, when it is passed; as when the child lies cross, with its back against the mouth of the womb, with its knees drawn up, towards the belly, or perhaps bending so much, as not to be at a great distance from its chin; or as with its belly next the mouth of the womb, and its legs falling as much backwards towards the hinder part of the head: these two postures may easily occasion some difficulty, though the first not so much as the latter. So again, the difficulty may arise from the largeness of the child, or from its having some such disease, as may encrease its bulk in general or the size of any parts of it, as a watery-head, or one any otherwise swelled: for I have seen of those children, who after a very difficult labour, have been born into the world, with an head, distended to an un-

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common size, with nothing but air, included between the scalp (or outer covering) and the scull: such an one, I had the opportunity of opening about two years ago, for the satisfaction of some ladies of the neighbourhood, who had been inform'd, that the child was born without any scull, or eyes. And indeed, at the first sight, it did appear so; for the large swelling had so pressed upon the bones of the head, as to crush them one over another; so that the bone of the forehead, shot down towards that of the nose, and pressed upon the optic nerves so strongly, that the eyes were sunk into the brain, so low, that when I opened the eye-lids with my fingers, as far as I could, I could not discern any eyes at all that it had: neither indeed could I feel any scull, (the quantity of included air being so very great, and the elasticity so strong) till by thrusting in my incision-knife, I had let out the air, which filled the room with

a most intolerable stench, and that having made its exit, the eyes of the child immediately appeared, to the great surprize of the spectators, of this (seemingly) monstrous appearance; but the bones lay still out of their proper order; for the membranes, which should keep them at the proper distance, were utterly destroyed.

MIDW. This was a very strange case indeed, Sir.

DOCT. Ay, Sophia, but it was really fact. Now, these are absolute difficulties, which do not admit of being removed, and are, therefore, such as you must unavoidably encounter with. And, now, I come to the operation itself, which is thus performed: having laid the woman with her shoulders very low, her hips elevated (or raised high) her knees held up, and kept wide asunder, and her heels drawn up towards the nates, or buttocks, you are to
pass

pass your hand (your nails being first pared, which you should always remember to do) anointed with oil, pomatum, or some such substance, in order to find what part of the child offers first; and, whatever the posture be, (except when reason directs otherwise, or the child comes right) you should search for the feet, always remembering to proceed with as much care and gentleness as you can. When you have found one, secure it by tying it with a ribbon, and having satisfied yourself from the great toe, to which foot it belongs, you will find no great difficulty attending your search for the other: Having found both, get them, if you can, between your fore and middle fingers, one placed above, behind the heel, and the other upon the instep. When this cannot well be done, you must get them the best way you can, and draw them down into the vagina; so low, that you may make use of your other hand, which must

now be employed in turning the child. As soon as you have proceeded thus far, you are to take the legs with one hand in a cloth (which must be fine and soft) and having placed the mother in the posture you put one in, when the labour is not attended with any difficulty at all, (that is, with the upper part of the body a little raised) with the other hand, placed as high as it can well be upon the body of the child, gradually turn it) if the toes are not turned towards the mother's back) and gently bring it down, till you come quite to the arm-pits, and then order the mother to use her efforts; in the mean time endeavouring, if you can, to get a finger or two into the mouth of the infant, let the arms go over the head (if you cannot easily fetch down the arms) and draw it away.

MIDW. But, Sir, this way of pulling the child with the arms over the head,

is methinks something strange and out of the way.

DOCT. True, Sophia, it is not agreeable to the doctrine of most who have written upon the subject; (and, indeed a modern writer has offered some reasons against the practice) but it is advised upon the authority of the most experienced and celebrated Daventer at least, and is consistent with reason, and the nature of things: Nor do I know any objection that can be fairly made against it, but that one of Mr. Chapman, "That the arms can be no possible security against the head's sticking upon the bones, and by that means dividing the vertebræ so as to draw the head": For the proof of which he produces a single instance of an unsuccessful trial he made of Daventer's way; which attempt, he says, his regard for that author, led him to make,

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BUT without any desire to detract from Mr. Chapman's character, notwithstanding I think he has dealt too freely with that of the truly great and celebrated Daventer, who has deserved too well of the public to have his authority disputed upon any slender foundation; I must take the liberty to say, that this objection does not appear to me, to be of force enough, to weigh down the reasons that may be given in the the behalf of Daventer's practice, who assures us, that this was his constant way; for let any one but consider the difficulty that must attend the getting down of the arms; in doing which, according to Mr. Chapman's advice, both the hands must be at the same time (as well as the child's body) in the vagina, (from which the Woman must necessarily suffer an additional pain;) let it further be considered too, how hard it must be to keep the arms when fetched down in a direct line with the
 child's

child's body, so that no hazard may be run, of dislocating the joints, or of breaking the bones of the arm; and moreover, that no advantage of a lesser space of the child's body, is obtained, by fetching down the arms; since the body, from shoulder to shoulder, measures the same when the arms are over the head, as when drawn down to the side, or when the child comes away in the natural way. Add to all, the difference of time required in each of the operations (which is a thing of some moment sure!) I say Sophia, let all these circumstances be duly weighed, and I think (with submission) Mr. Chapman's argument must be found wanting, to invalidate the authority of the celebrated Daventer.

AND as to the inconvenience upon which he founds his objection against Daventer's method, that of the vertebræ being divided;

ded; the same, for ought I can conceive, might equally have happened from the other practice, which he recommends: Since that accident was owing to the smallness of the pelvis, or the uncommon magnitude of the infant's head, rather than to the head's being wedged by the arms on each side of it. However, as an improvement of Daventer's method, and as a sufficient security against the inconvenience Mr. Chapman is apprehensive of from it I advise, that while you are drawing the child forth, with the arms above the head, you get a finger or two into its mouth: and this done, no such accident, as he speaks of, can happen; unless either the pelvis, (or rather its opening) be more than ordinarily small, or the head of the infant of an uncommon size. After all, Sophia, you may take which of the two ways you please; provided that you can do your work with reasonable expedition, and
without

without too great an exhaustion of the woman's strength, or putting her to any unnecessary pain.

WHEN your woman is completely delivered, and the after-birth is brought away a closure of fine linen cloth, five or six times doubled, must be applied to the parts concerned in delivery, to prevent the injuries which may arise from cold, which for want of such defence would enter the womb, and so close the vessels, prevent her cleansings, and cause some very bad and grievous symptoms, not to say death itself.

AFTER the vagina is closed, let your patient be carried to a bed (if she was not delivered on one) carefully aired, and covered with cloths, to receive what usually follows a labour; and having placed her in a proper situation, that is with her body a little raised, that she may breathe
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the more easily, her thighs and legs brought down close together, with a pillow under her hams to support them, and and let her lie supine, that is on her back, without turning either to one side or the other, that she may recover the strength which she had lost in labour. Let her curtains be drawn, and the room darkened, and take upon you to require, in the handsomest manner you can, all company to quit the room, and so leave her to the care of some good understanding nurse,

MIDW. But, Sir, should not she have something to moisten her mouth, which, with crying, must, to be sure be dry?

DOCT. Yes, Sophia, you may give her an ounce of oil of sweet almonds, with as much syrup of violets or marshmallows, to swallow down gradually, or if she does not care for that, some caudle, or such like thing.

MIDW. But pray, Sir, do you allow that she should go to sleep as soon as delivered? We women think that is not right.

DOCT. Ay, but that's a mistake; rest is the properest means, whereby she may recover her strength: therefore I advise you by all means to let her rest; you must not neglect to visit her sometimes, Sophia.

MIDW. I am greatly obliged to you, Sir, for the instructions you have been so good as to give me: and as I am apprehensive that I shall reap no small advantage from them; so I shall endeavour to treasure them up in my mind, and put them in practice, as opportunity shall offer. But I beg leave to ask of you the favour of resolving me one question more, and that is, what I must do in case of Floodings.

DOCT. I never designed, Sophia to make you a doctress, but to tell you how to practise
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tise as a midwife. To perform the manual operation is your work : to do it well be your crown and honour. Medecines are not the province of a woman. Our nation affords us a set of men who make the art of healing their study : to these therefore you must have recourse, when any thing appears dangerous. Nevertheless, that you may not be utterly at a loss in this case, nor appear to the standers-by, to be a meer idle spectator of your patient's condition, I will acquaint you, that the common means are these : since floodings are always attended with great weakness, and faintings you must advise the patient to take good broths, jellies, or a little wine ; let her smell to some spirituous liquors, such as hungary water, sal volatile, or the like. If the flux of blood be not very violent, or even if it be great, and other help, cannot readily be had, you may try to stop it, by applying napkins dipt in a mixture
of

of equal quantities of vinegar and plantane water, to the small of the back. When the case is really dangerous, and these means fail, if you would consult your own reputation, and the woman's safety, you must fly for refuge to the art of the learned.

Now. Sophia I have one particular charge to give you, which I hope you will always attend to, when you perceive that there still remains one or more infants in the womb after the exclusion of the first; you are to take great care not to extract any of the secundines of the first child before each of them are delivered, otherwise it may occasion a fatal flooding both of the mother and the other infants; and that you may be farther informed, I here present you with an explanation of the drawings that you received from me sometime since; and heartily wish you to make the best improvement of my instructions.

Ex-

EXPLANATION of the *PLATE*.

Fig. 1. Shews the method of examining the state of the os uteri with one or two of the fingers, to discern whether it be dilated contracted, or in an oblique or straight direction; from whence the operator may form a judgment concerning the delivery, whether it will come presently, easily, or difficultly, &c. A denotes the uterus, BB the vagina laid open, CC the os uteri internum, as yet contracted, but in its right situation, D represents the manner of examining the os uteri with one or more of the fingers, which if obliquely situated either forwards toward the os pubis, backwards on the os sacrum, or towards either side, denotes a difficult delivery.

Fig. 2. Represents the natural posture of the infant in the birth, with its head protruding into the os uteri, under the arch of the ossa pubis, A the infant, BB the womb laid open, CC the ossa pubis, DD the ossa ischii, EE the ossa ilei, F the navel.

navel-string, G the secundines adhering to the womb.

Fig. 3. An infant presenting with its feet foremost.

Fig. 4. Shews the nates or buttocks offering themselves, and the method of forwarding the birth by applying the hands to extract them.

Fig. 5. Represents the Fœtus in a transverse position, with the hand of the operator endeavouring to turn it.

Fig. 6. Shews the manner of apprehending the infant's feet turning and extracting them.

Fig. 7. Shews the infant in a transverse position, with its abdomen towards the os uteri and vagina; in which posture the navel-string often comes out, to the hazard of the infant's life.

Fig. 8 Represents the head obstructed by the left side of the pelvis, and the neck being strongly compressed by the contraction of the uterus, renders the birth extremely difficult, or impracticable.

Fig. 9. Shews the infant's head inclined towards the right side of the pelvis, with
the

the manner of replacing it by the hand, when the waters have been lately discharged.

Fig. 10. Shews the infant presenting its elbow or shoulder to the os uteri, with the manner of apprehending the feet, in order to turn and extract them in this, and other unnatural postures.

Fig. 11. Denotes the manner of passing up the hand, in order to turn and extract the infant by its feet, when its hand and arm hang out of the womb.

Fig. 12. Shews the infant with one foot out, and the manner of investigating the other for its extraction.

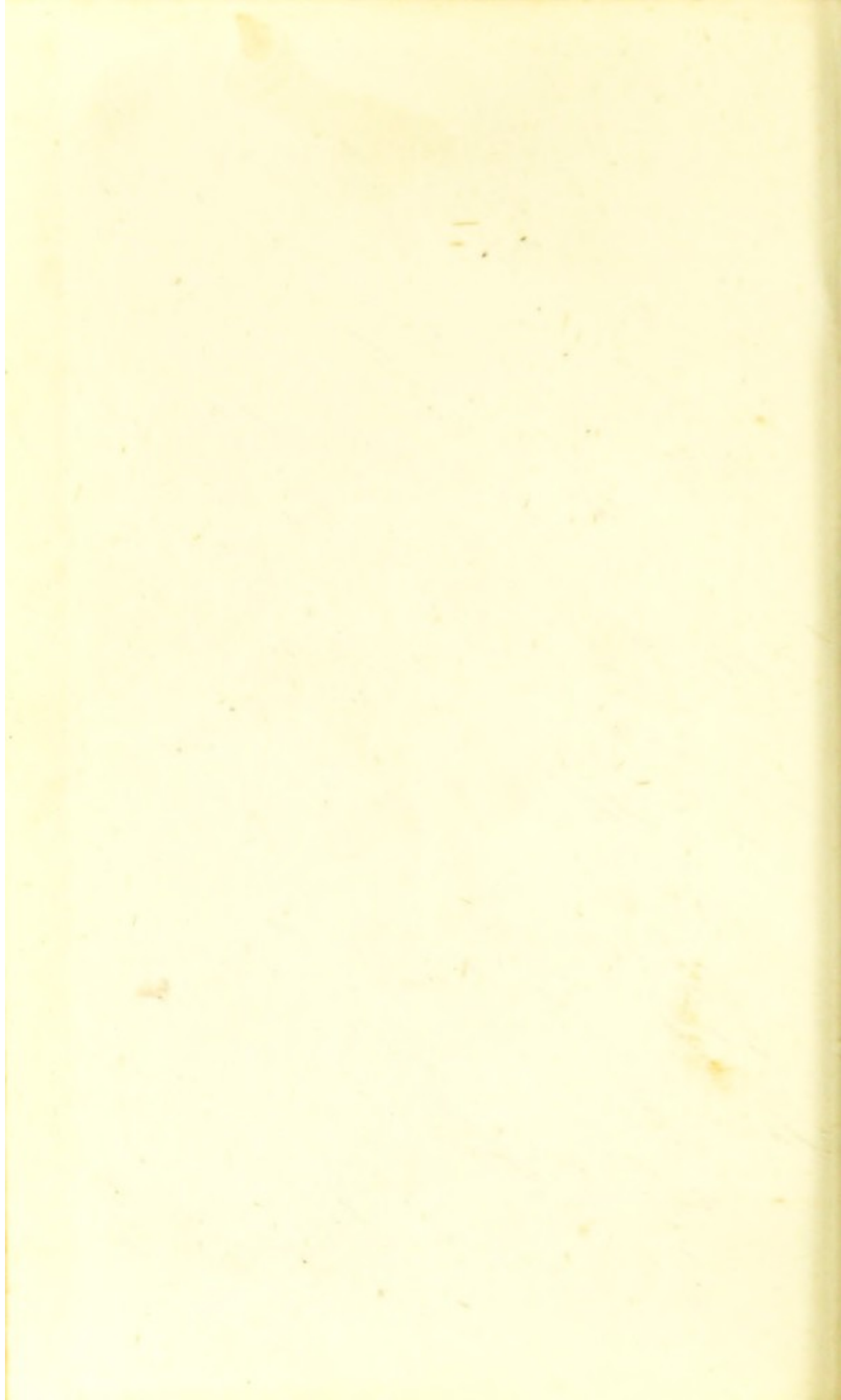
Fig. 13. Exhibits the method of seperating and extracting the placenta from the womb, when it does not easily follow the infant. There the navel string AA is held by the left hand B, while the right hand D, is thereby guided in the collapsed uterus CC, to the placenta E, which is hereby seperated from the uterus.

T H E E N D.

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